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The Plough, the Loom, and the Anvil.

VOL. IX. JANUARY, 1857. No. 7.

Agricultural.

AMERICAN FARMERS.

SOME would call them *agriculturists*. It is a longer word, and it is Latin, if that is any recommendation. But we love the good old Anglo-Saxon word, *farmer*. It is English, and English is good enough for us. It is short, and we love words that we and our readers can get over quickly. Formerly it seems to have meant one who collects revenues for another party. In Europe it has come to mean pretty generally those who till another's land. In this country, thanks to our institutions, it means the tiller of his own acres. If some of our readers, who cultivate the staples of life and of wealth on a liberal scale, choose to call themselves *planters*, we have no sort of objection. The distinction seems to be well enough founded. Only let them understand, that when we use the good old-fashioned word, as we were educated, we mean large farmers as well as small, and planters, as of the same brotherhood. When we speak lovingly to the farmers, let them consider themselves included; and if we sometimes get angry and scold, as we may even before the end of this article, let them not dodge, under what may seem to them a misnomer, for, in speaking of farmers, we always mean those, and all those, who cultivate the soil.

What the farmers of this country are, what they ought to be, and how they are to become what every impulse of an intelligent philanthropy desires, is a subject of intense interest, not only to themselves, but to every well-wisher for his country and his race. If our pen were not contrary, refusing to report more than half our inwardly burning thoughts, we would do it ample justice. Religion, learning, agriculture, are our trinity of ideas. But how shall religion effect her divine mission, how shall learning flow more deeply and widely, if the millions who cultivate the soil are to be for ever denied that position of moral power and of political and social influence, which of right belongs to them? Christianity will fail to renovate the world, science will halt midway in her achievements, unless the cultivators of the soil shall cease to be looked down upon by the very men who have reaped millions by trading in their products.

But *what are the farmers of our country?* A few of them are rich; not in the mercantile sense; very few have accumulated more than half as much as a failing merchant might honorably (?) slip aside from the grasp of his creditors; but rich enough—can pursue their calling comfortably and without any reasonable fear of want. That is the farmer's idea of riches, and it is a pretty good idea. Such we have generally found to be liberal, ready to give when there is occasion, cheerful to educate their children, to grant them all safe indulgences, to provide comfortably for their families, and to pay all assessments, notwithstanding that the farmer, from the very nature of his property, known and seen of all men, is always made to bear more than his fair proportion of the public burdens. When we hear some sprig, with soft hands and softer brain, say, as we often do, that the farmers are a bigotted, stingy set, we abstain from kicking him only because we have made up our mind to be civil. Retired merchants sometimes try their hand at farming, and it is a very good thing for them and others, as it generally disburses some of the wealth of which they have contrived to get more than can be held comfortably by one man, and to put it in the reach of those who need it. In fact they are *capital* fellows to give employment with sure pay; and then the freedom with which they apply capital to the new business, is a fine example to other farmers, *whenever they apply it judiciously;* and further, they clear up, and fertilize, and beautify many a farm which would remain ugly and unproductive but for their extraordinary means; and further still, not a few of them are importing and diffusing fine blood stock, greatly to the benefit of the country—a thing which most farmers are unable to do. All thanks to them for this. We have not the least objection to their enriching the country as much by these importations as they had before enriched themselves by the importation of articles which ought to have been dispensed with or manufactured at home; that is, if they will enrich it as much by the new operations as they impoverished it by tempting us to buy what we did not need, or ought to have made ourselves, we will agree to call them pretty good fellows. What is yet more to their praise, is, that a goodly proportion of them become, after a little experience, really good, sensible, judicious farmers, excelling even the older members of the craft; and all must admit that by their land improvements, they are making their mark on the world —more than some of us are doing.

Next after the rich farmers—those who have gained their wealth by farming, quite differently from the merchant princes just spoken of—rich we mean only in their own more sensible view of the subject, having enough to live generously above the fear of want—is a larger

class, who though passibly well to do, are not in as easy circumstances as men of their industry and capacity ought to be in such a heaven-gifted country as this. It is true, that they have not been, as a general thing, as inquisitive after the best ways of prosecuting their calling, as they might have been. It is true also that they have not always been as free to invest capital in their business, as would have been for their interest. The cry that capital invested in labor and fertilizers does not pay, has frightened them a little more than was necessary, and they have pursued a creeping course to a bare competency, when a bolder course would have put them up in the world. But after making all reasonable deductions for what may be regarded as their own faults, the farmers of this country, from causes hitherto beyond their control, and perhaps always to be so, though we hope not, have not been paid for their skill and industry in proportion as they have contributed to the general prosperity. That is the plain English of the thing. There is something wrong, something out of joint, a screw loose somewhere, when a hundred merchants in Boston hold more wealth than all the farmers in that populous old State, and pay but half as many taxes; when a similar comparison holds to a greater or less extent of other cities and their surrounding rural population; and when this very thing is getting nothing better, but rather worse. There must have been a good deal of one-sided legislation to produce such a state of things, and that too since the olden times, when no law enacted here could take effect till approved at the Court of St. James. We are no apologist for slack, slip-shod, lazy, sleepy, uninquiring farm life, that never thrives and never ought. If the farmer will not be as wide awake as the merchant, he may blame himself if his dish is not found right side up. He must be as liberal in the patronage of journals devoted to his business, as the merchant is towards those devoted to his, if he would understand his interest as well, and hoe his row as clean. We confess that the hoeing of the row is rather an up-hill, discouraging business, if more than half the corn is to go to make city millionaires. But there may be a better time coming. Party strifes and sectional interests have hitherto kept the farmers of the country apart—have made them chase a phantom over their own bread and butter—have divided and conquered them. It may always be thus; and if so, then Republican Government is an *ignus fatuus* light at first, soon to go out in darkness. We hope better things.

Another class of farmers, larger than both of the others, are not well to do. They have the *double trouble* of not doing much and of not being fairly paid for what they do. The two causes depress them in a degree that is shameful in such a country as ours. They can't

wear a good coat. They can't get their wives a new dress; can't allow their sons and daughters reasonable indulgences; can't send a son to college, if he is ever so bright; can't hold up their heads and be men, especially in a pinch, where it takes a little money to be a man. The whole family economy has to be on a scale, absolutely belittling, degrading, seminal of a peasantry to be trod upon, as soon as those who get the money take it into their heads to tread on them. The position of these farmers leads every spirited girl in the country to prefer a merchant or a professional man, and is the father and mother of nine-tenths of the miserable slang, every where heard, about the niggardliness and illiberality of farmers. To show how little we sympathize with it, we will relate a recent occurrence in our own office. A dealer in patents called. We overheard him, as we were writing, say to another person present, "The farmers are the meanest of all men; they won't have an improved implement till they know they will make by it, and then they will steal it." We turned around, straightened up with more dignity than we are conscious of possessing, looked at him with an expression of blank wonder, and said, for we did not know his name, "Man, you've come to the wrong diggings to say such things; you don't know what you are talking about; the farmers are not the only men who wait to see whether they will get their money back again before letting go of it; as for stealing, they are the very men who won't steal; and you either know it, or else you know nothing of them." The chapter ended, and we went to writing. Whether our unknown visitor was wiser, is doubtful. Our reflection was, that if the farmer gives heed to every solicitor, he will soon be down and none to help him up. Not *he* can save a snug competency out of his creditors. The merchant may let a few dollars slide, and have enough left; but in the present state of the country the farmer must count his dollars, and spend them considerately, and if he gets called a niggard for it, better so than worse. That farmers are obliged to adopt a more rigid economy than would be desirable for its own sake, partly from their own fault, and, as we think, partly from wrongs not self-inflicted; that they do not as yet hold that position of social influence and political which of right belongs to them, and which the public good requires that they should wield, is a truth which we wish all would dispassionately consider. *American farmers are not as a whole what they ought to be.*

What then ought they to be? As intelligent as any other class, just what many of the more able farmers are—as intelligent, first, in matters pertaining to the science and practice of their own art; and, next, in matters of government and general interest—as influential in matters of Church and of State, of education and public sentiment,

as any others, liable to no such sneer as that "he is nothing but a farmer," and doesn't know much, of course; as interested, as cheerfully active and benevolent in all matters pertaining to the public weal, or to the soothing of private griefs; not rich in the mercantile sense, for the world does not contain wealth enough to enrich so great numbers as the farmers must necessarily be in any country—without money to fool away, but rich enough—able to be full grown men, in their families, in their school district, in their town, county, State, and in this glorious Union. If this were an old, aristocracy-ridden country, where the wealth was made fast to the few by legislative enactments of a thousand years' application, we could bear that the tillers of the ground should be peasants, and if they were transferable with the soil it would make no great difference. We should not expect them to possess a particle of influence. What would the government care for them except to *use* them? To labor and to be despised would be synonymous of course. But ours is a virgin country The most useful men in it are those who subdue the land and keep it in fertility. It is intolerable that their toil should not be rewarded and honored; and if there is one thing in the aspect of the times which would lead us to despair of the Republic, it is, that the farmers of the country, though undoubtedly in advance, as a whole, of those anywhere else, are not in advance *toto capite*, as, from the very nature of our country and its institutions, they ought to be. It sickens us to the soul when we see the close, self-denying, humiliating, almost degrading economy to which too many of them are compelled to resort, and compare their position with that of the millionaires, enriched by traffic in their products, filling our city palaces and country villas, each one possessing enough to make a thousand farmers rich and generous, who are now reckoned by the thoughtless and indiscriminating among the penurious and niggardly. How many times have we heard it said of a farmer, that he would pinch a penny till it squeals, when we knew that this same farmer had a good large heart, that he was doing the best he could, and that if he had not money to meet the demands of charity, he would give his services to the needy, and scorn to be paid. To a coxcomb, whose father made money easily and allowed him to spend it foolishly, and who was berating the littleness of Massachusetts farmers, we once replied, that those farmers are not overstocked with change, but you just contrive to be traveling with a family of women and children, and have your carriage break down in front of a Massachusetts farmer's house, and see how he will take you in, give you his best, send his man to get your carriage mended, keep you over night, and when you go in the morning refuse to take pay, almost refuse to be thanked, saying that you

have had the worst of it. Said he, it is just so; I don't believe the farmers are so stingy as I thought they were. A great many heedless people would alter their opinion about them, if they would think a little. We will stand up for the farmers; and if we should be found blaming them before we get through, let them know that the wounds we inflict are "the wounds of a friend." We verily believe that they ought, in a young and self-governed country like ours, to be highly informed, to exercise a conservative but powerful influence on the government, and, with the exception of cases of uncommon misfortune or imbecility, to be rich, at least in their modest sense of the term.

But *how are they to become such?* That many of them are men of whom any nation might be proud, none is quicker to perceive, or rejoices more to acknowledge, than we. Why should not the masses approximate the same standard? We would not ignore the fact that there is progress. But we do wish to see it more rapid. As we have already intimated that the difficulty is two-fold, partly without and partly within themselves, so the remedy lies in two directions, one in the government's care for the great industrial interests of the country, the other, in their management of their own affairs. And now since the farmers are the largest class of the people, perhaps a majority of the whole, it rests very much with them to see that the remedy is pursued in both directions. On the former we will not dwell—it is not in our line, and we might blunder sadly. We will only say that to us it seems as clear as the noon-day sun, no cloud intervening, that government should look after the industry of the country, protecting such branches as cannot quite compete with foreign interference, and thus ever hastening the time when the nation can supply its own wants and be truly independent. Every want that is supplied by home industry benefits the farmer, because it increases his customers, and gives him a ready market, one in which he gets the whole, not half, of what the consumer pays. We know there are difficulties in the way of a just protection, because the manufacturer, intent on getting the lion's share, thrusts himself into the lobby, and under color of furnishing statistics, teaches Congress the very curious doctrine, that the farmer's interest will be advanced by leaving wool unprotected; and the merchant goes there and whimpers about the loss that will accrue to the carrying-trade, if we should not buy our iron of Europe, just as if we may not make our own iron, lest he should lose the profit of bringing and selling it to us; while the farmer, more modest, stays at home and takes what a Congress, tampered with by every body else, may choose to give him—the privilege, perhaps, of furnishing wool to our manufacturers,

after Europe, Asia, Africa, and South America, have furnished as much as they please, without let or hindrance; or the privilege, it may be, of half-feeding the iron-maker in Europe with a little exported wheat, when he should have the privilege of feeding him to the full, here on our own shores. Would to Heaven Congress would kick the lobby members overboard, and then sit down and make a tariff that would be fair and just to all parties; first and foremost, to the agriculture of the country.

We find ourself, as too often happens, at the end of the space allotted to this subject, and yet the point on which we proposed to dwell most of all untouched. Of course, we must leave for other occasions, of which we hope there will be many, the means by which the farmers of this country are to elevate their own position, and widen their influence, and make it felt, irrespective of governmental action.

If the vulgar aphorism is true, that every tub stands on its own bottom, it is as true of American farmers as it is of tubs. Thank God, they are not a very dependent class yet, and may they never be more so. But if they want to stand on their own feet, as tall as any body else, and not lie down and be a bottom for every body and every thing else to stand on, they must depend mainly on themselves; must be self-reliant, united, respected. There are influences enough, in this country, that will make farmers peasants and boors, if they will suffer themselves to be made such; politicians enough, who will ride them, if they will be rode; rascals enough to legislate for them, unless they should take into their heads that the majority rules; and that they may as well be united, and legislate a little for themselves.

In no country yet, since modern civilization dawned, have the tillers of the soil made themselves what they should be; in none have they ever possessed their due share of intelligence, wealth, influence, and power. Whether this country is to be a glorious exception, is yet to be decided. Its decision depends very much on the present and the rising generation of farmers. As to what the farmers of the country are to do to secure their own elevation, along with a perpetuated Republic, we have burning thoughts; and if our readers will be a little patient, we will come to them (a kind Providence permitting) before the year now entering goes out. N.

Fallen Fruit.—No fallen, unripe fruit should be permitted to decay on the ground under or about the trees. Fruit that drops off before it is ripe, does so because an insect is in it which has diseased it. The insect matures in the fallen fruit and rises to infect the tree or leave its larvæ for another crop of its kind. Fruit-growers cannot be too careful in gathering the fallen fruit, that the grounds beneath their trees do not become insect nurseries—that their orchards do not become swarming households for insect tribes.—*Ex.*

CLOVER AND HERDS-GRASS.

MESSRS. EDITORS:—In answer to some proper suggestions of yours, appended to our article on "Sheep and Farming," we can say that clover-seed, sown in favorable seasons, and where it takes a good root—"catches well"—it is one of our most profitable investments in the line of agricultural economy. But you know all countries are not adapted to it; that it will very frequently heave out; that roots are often seen in the spring of the year, nine or even fifteen inches in length, lying on the top of the ground; and that, therefore, seeding low, mucky lands with it, proves unprofitable; while, on the other hand, seeding sandy, chestnut soil with clover-seed renders its use profitable in an eminent degree, as experience has very frequently shown. Now, when we sow herds-grass in this part of the State of New-York, say in Onondaga county, also in Seneca, and in that tier of counties, we are generally very certain of getting a growth of grass from our seed, or the seed almost invariably "catches"—it does not fail so often as clover-seed; and we regard timothy hay as of more value by at least sixty per cent. than that produced from the sowing of clover-seed. But notwithstanding this, clover has its absolute value; namely, it is of great consequence in making either clay or sandy lands rich; it furnishes them with manure, and thereby they are kept up, improved in value. The roots of clover penetrate deep into the soil, and hence bring out, or up, its latent properties. Herdslgrass, we have noticed, seems to confine itself to the surface, and is very hardy. It will do well on almost any kind of land, though the soil must not be too wet for it; but its growth is always governed by the strength of the soil, as a matter of course. It makes excellent hay, as you well know, and is now extensively raised in the West, and in this country. We would rather have a ton of the hay than two and a quarter tons of coarse clover fodder. If you want to manure impoverished sandy soil, sow clover-seed, by all means; but if your land is in tolerable condition, and if you have horses and milch-cows to feed, sow herds-grass, and when you feed the hay, you will be satisfied that you are throwing out a good deal of substance. Cattle will gain on it; so will sheep and horses. We are of the opinion that more and more of it is being sown every year, for farmers are becoming convinced of its value.

There is a good deal in cutting herds-grass in the right period of its growth. If it stands too long, its substance will evaporate; therefore, it should be cut early, when the stalks are quite green, and then it will retain many of its most valuable juices. Farmers do not sow timothy-seed enough; they should sow more, and help the

productiveness of their lands. Put on one round peck to the acre, and seed it with as much care as you would your wheat lands, etc. Money expended in the purchase of grass-seed is well laid out. Only look at soil which has never been fed with herds-grass, and your attention is called to the fact that something is wanted to cover the land, to enrich it, and make it what nature really designed it to be, namely, productive and lively in its character.

We are now getting from the West much herds-grass seed which is not pure; it is mixed up with foreign seeds of one kind and another, so that Eastern farmers do not feel safe at all times in purchasing it. We should, therefore, raise our own seeds, and not depend upon poor Western counterfeit seed for our use. Raising the seed is profitable business, if you only have the right kind of soil—free from foulness, etc.

In favorable years, it will turn out remarkably well, and satisfy the husbandman in a most remunerative manner.

Very respectfully, W. TAPPAN.

BALDWINSVILLE, N. Y., December 15, 1856.

We are exceedingly pleased with the discriminate character of the foregoing. The writer seems to us to be a keenly accurate observer of nature; and that we always hold is the first requisite for a good farmer. Naturally acute powers of observation, sharpened by reading and conversation with intelligent men, will go far to supply the place of learning in a farmer; or, what is nearer the truth, will make him a learned man, in time, in his profession. Hence we have often said, that when we have a little time to study *scientific agriculture*, we love to get alongside of an old, reading, thinking, acutely observant farmer—one who has *worked* the farm and watched nature half a century. The only reason why the farm is not the only and the sufficient school for the education of farmers, is, that knowledge obtained in this way comes too late in life. Too many blunders and losses are made from a want of it earlier. Many a farmer, when life is ebbing, has occasion to wish he had known at twenty-five what he does at sixty. Hence, we think, is one great advantage of scientific schools for agriculture—not to make the practical farmer profoundly scientific abstractly, but to give him an insight into nature, to create a taste for scientific reading, to quicken the powers of observation, and to give the farmer the benefit of all this while life is yet young and fresh, and while he has many years to reap the benefit of it.

As to our author's idea that the nutritive properties of herds-grass evaporate by its standing too long, we think he teaches no *practical* error, and so it is well enough; though we suppose it would have

been more philosophically accurate, if he had said that the sugar of the grass turns into starch, and then the starch into woody fiber, so that what was before digestible, and would have gone into the tissues of the animal, becomes indigestible, and has the effect not to increase the size of the animal, but only that of the manure heap. We will give our idea of the best time to cut herds-grass in another place. N.

POLICY OF FARMERS.

THE following seems to us to contain sound instruction, in adaptation to the latitude whence it comes; and we receive it with the greater pleasure, from the fact that we are not as familiar with the agriculture of the South, as we desire to be, and are yet desirous of making our journal useful to all parts of the country. If practical men, those of experience and observation, in different sections, will give their views, either on the general policy suited to their respective regions, or on the cultivation of particular crops, whether of the garden, the orchard, or the farm at large, or on the rearing, use, and disposal of farm stock, any thing that pertains to the working out an independent living from the soil, they shall have, as the writer of the following has, our hearty thanks. And as we see no reason why farmers and their families should be excluded from an appreciation and a love of the beautiful in nature and art, why will not the ladies, wives and daughters of farmers, or others, give us a little of their experience in the garden, or with the flower-pots? We have an idea that God made the flowers, and that it makes us better to love and admire them; and then our readers know very well, that we have the odd notion, that the ladies themselves will bloom more beautifully, and become more competent to the vicissitudes of life, if they will be more out of doors; and as we should hardly wish to see them on the top of the hay-cart or the wheat-rick, or with hoe in hand cutting up the weeds in the field, the flower-garden would seem to be a fit theater for their industry and taste, in which, while creating beauty, they would be receiving it, with extra health into the bargain. But we are keeping the reader too long from the more important practical matters below. N.

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

EDWARDS, MISS., November 25, 1856.

MESSRS. EDITORS:—Your November number is to my taste—one of the richest numbers I remember to have seen. I believe I have seen all, as I began with the beginning, for I think I have been a subscriber for all the agricultural works of our very worthy I. S. Skinner, since 1832, up to the day of his death.

I rejoice much that you was called out on 264, etc., pages, and that you make so *orthodox* a showing. Allow me to say, some folks say, "Orthodox is my dox, and heterodox is opposed to me." This is not what *I mean.*

I have been engaged in planting on my own account, for nearly twenty-six years. My twenty-sixth crop is now gathered, wanting about three or four days' labor; and mingling as much as I have done through the South and South-west, I have known a great many planters. I have found it is not always a consequence that the largest producers of cotton get rich the soonest; but to the contrary. "Extremes are dangerous." I think, perhaps it was Horace said, that safety lies in a medium; at all events, I can point to more fortunes made by pursuing a medium course, than either extreme.

In this country, about the medium latitude for cotton, no man can succeed best by attempting to make every thing, (for that is impossible,) nor, on the other extreme, to make cotton his only product. We can make sugar and grow wheat in a part of this county. Hinds might grow the latter profitably; yet would it be sound policy? The few who have the choice lands of the county, can, by good management, grow ten bales of cotton, four hundred pounds each, to the hand, and yet make corn, and meat, and potatoes, and pumpkins, and turnips, and peas. Some of us that have cypress, can make our own shingles; we can make our horse-collars out of the shucks or the bark of the lime-tree; we can make our own whiffle-trees, (single-trees,) ax-handles, hames, with the aid of a smith to iron the first and last. If a short crop comes along, we ought to take time to gather peas for sale, or make shingles on wet days, and always strive to have a few bushels of corn for sale; and a hog or two would be no drawback.

Much or all this should be done, even if we had to make less cotton.

This is my twenty-sixth crop *here*, and I am certain that I have sold corn, hogs, peas, shingles, sheep, cattle, more than I have bought, though in that time I have made many wild purchases, and have had to buy meat; besides, I think I have a margin, *perhaps* enough to pay overseers' wages during that time—I say *perhaps*, because I have not employed an overseer half the time, and think the half I had none, that I sold odds and ends enough to pay for one, when I had him, admitting that under overseers I have sold comparatively little. Some few years since, there was a great desire for fruit-trees, when I pitched in and worked enough to give me a few hundred, and without interfering with my duties as owner of my own hands.

The cotton planters, though much improved, do not keep plough-team in quality or quantity, nor tools, to work to the best advantage.

When I had a good work horse to each hand, I always had most corn to sell, and, *vice versa*, when least team, least corn. I admit, I own much above an average place for this county, but I claim that my crops, for ten years together, were better, not alone for land. During my planting life, I have never had less than two agricultural papers. Have these not aided me? I know it. I know, if I believe many good friends, that I have done some good, though perhaps much harm, and I attribute it all—the good—to the lamented Skinner. I love to do his name honor. And just here, permit me to thank thus publicly, the editors or the publishers, or some friend—I know it is a friend—who sends me the *Alabama Planter*, *American Agriculturist*, *Western Farm Journal*, *The Farmer and Planter*, *The Farmer and Visitor*, all the way from New-Hampshire, Manchester; *The Ruralist*, though last not least, *The Valley Farmer and Southern Cultivator*, besides many odd numbers of others—all sent me gratis, and the two first for years. Besides, I receive Fruit-tree Circulars from everywhere, almost. Permit an old veteran in the cause, to rejoice over such fruit of approval from his peers and superiors. It is wont to me to be thankful. Yours truly, M. W. Philips.

THE TIME TO CUT HERDS-GRASS.

It is not certain that our views on this point will agree with those of all our readers, especially as perhaps not two of them think quite alike. According to our *notions*, and they have not been conceived hastily, the earlier herds-grass is cut, within any reasonable bounds, say from June 15th to Sept. 1st, the better will be the *quality* of the hay, if equally well cured in all cases. This is a point on which we have no doubt, though we know that some, with whom we would gladly agree if we could, think differently.

But this is not the only point to settle. The *quantity* of hay will be increased by late cutting. We wish to ascertain when the *value* will be greatest. Evidently, we think, when the seed is as nearly matured as it can be without danger of wasting, just at the time the blossoms are beginning to fall, because then the plants have attained about their full growth, and because then the sugar and starch are best arrested in their transformations from digestible to indigestible conditions. We suppose that nature, in the growing plant, forms sugar out of its elements, that the sugar is gradually transformed into starch, and then starch into woody fiber, which is nearly indigestible and consequently innutricious. And then again the phosphoric acid, which is concentrated in the seed when ripe, and the nitrogenous substances which are there concentrated in a great part, are lost if the seed becomes so mature as to fall out.

Having settled, to our own satisfaction, at least, the point of greatest value, there is another consideration;—the labor of curing the hay diminishes, if we let it stand till rather late. There is one other consideration, which always *will* influence practical farming, whatever theorists may say; and that is, when can the farmer get time to cut and cure his herds-grass. He cannot do every thing at once. If his wheat is fully ripe, and ought to have been cut four or five days before, the herds-grass must wait a little.

Our conclusion then is that herds-grass should be cut just as the blossoms begin to fall, if it can be done then conveniently; that if it should be cut a little sooner in anticipation of important work ahead, no great loss will ensue; and that if you are obliged to let it rest a few days later, till the corn-hilling, or the wheat harvest, or other pressing matters are over, it will not be best to fret. The difference between the *right time* and a few days earlier or later cannot be great.

Here we want to say a kind word to farmers, whether it fairly belongs to the subject or not. The peculiarities of our climate, our long winters, our sudden transitions from winter to summer, the rapid strides of vegetation when growing time comes, all tend to make the farmer indolent a portion of the year, and to work him beyond all reason another portion; both of which are unfavorable to his rising to the possession of a sound judgment, a clear, well-informed intellect, and a cheerful, resolute, unconquerable enterprise.

The tendency of an indolent winter and an overworked summer, is to make the farmer inferior to the merchant and the manufacturer, as a man—less wide-awake, less thinking, less enterprising. The temptation should not be yielded to. More important advice than the following we do not believe can be given:

Lay out the work of the farm, as far as possible, so as to always have something to do, in spite of wind and weather; and never do more at one time than is reasonable, for love or money. Some Northern farmers work themselves harder in summer than they would find it in their conscience to work another.

To work excessively six months, and then to suck the fingers as long before waking up, will not make much of a man, and in the long run will not produce thrift. The farmer's rule is to be always doing something, but not to work himself to death, even in harvest.

We include reading, of course, among the things to be done. It should have its times. The farmer who does not read his agricultural papers and some others must expect to fall behind his age. N.

FOREIGN CORRESPONDENCE.

THE following, from the *Journal of the N. Y. State Agricultural Society*, we think, will be read with interest. Any thing which tends to bring the nations of the earth together, to look into each other's faces, and to sympathize with each other on the great industrial interests of the world, we regard as a harbinger of peace and general prosperity. N.

[Central Agency for International Exchange—39 Rue de Clichy.]

PARIS, 6th August, 1856.

To Colonel B. P. Johnson, Corresponding Secretary of the State of New-York Agricultural Society:

DEAR SIR:—I have the pleasure of informing you that I have this day forwarded two cases, containing about eight hundred small paper bags of specimens of grains, seeds, etc., collected during the last Agricultural Universal Exhibition. From the arrangement and classification you will be able to appreciate the time and trouble it has cost me to complete it—and to tell you the truth, had it not been for the liberality of American gentlemen here, who, spontaneously and without my knowing any thing about it, made a subscription among them, which brought about one hundred dollars, and which enabled me to have three men exclusively employed for nearly two months in collecting, sorting, transcribing, and packing them up, I should have failed. This collection proceeds from England, Ireland, and Scotland, Denmark, Bavaria, Prussia, Holland, Belgium, Switzerland, Spain, the Roman States, Two Sicilies, France and Algeria, making, with those already forwarded, the most complete collection of cereals that could be brought together. The cereals from the Kingdom of the Two Sicilies were accompanied by the following letter:

"SIR:—Allow me to congratulate you most sincerely for the beautiful idea you have conceived for so many years, to establish a system of exchanges of scientific, natural, and agricultural products between all the nations of the earth. It is a mighty thought, and every one appreciates its happy results for the civilized world. Your system facilitates the exchanges of knowledge and all kinds of products; and, through your agency, each nation becomes acquainted with each other, and can obtain what they may want, and relieve their sufferings.

"Desirous of bringing my share in the support of your work, I place at your disposal the agricultural products exhibited this year, 1856, by me, at the Palace of Industry.

"Every one is acquainted with the fertility of Sicily, and the variety of its products; every body knows, likewise, the activity of commerce existing between America and Sicily. The knowledge of all what my country will be able to furnish to commercial researches may be of good interest to the American navy, for then they will not be obliged to provide themselves with certain products from more distant countries—exposing themselves to so many dangers, occasioned by a longer navigation, always perilous on the Archipelago's waters. Hence, they would find in Sicily the dried figs, with raisins,

and a number of other products, which they procure now from Smyrna, Patros, and a few ports of Asia Minor.

"In the Catalogue of the Universal Agricultural Exhibition, you will find, page 261, the list of the products I exhibited. I have the honor of inclosing herewith a copy of the Revue Franco-Italienne, in which these objects are mentioned. It will give you an idea of what can be found in the center of the Mediterranean Sea, without being exposed to long and dangerous voyages, and where, I venture to say, they will be procured at a lower market than anywhere else.

"This is one of the excellent results your system is destined to produce, in thus establishing between nations relations of this nature.

"Your system of exchanges encourages me to beg of you to obtain, from the United States, Scientific and Agricultural Works for the Botanical Garden of Palermo. This would be an indirect means to encourage my country to improve their practical agriculture and the acclimation of many plants, the cultivation of which might be easy and most profitable.

"You see, sir, that I use the principles introduced by yourself. Perhaps I am intruding; but you will not tax me with giving little to obtain much, when I give all I can.

"Please to receive the assurance of my high consideration.

(Signed,) "Baron VINCA.

"PARIS, June 23, 1856.

"To M. ALEXANDRE VATTEMARE, Directeur de l'Agence Centrale des Exchanges Internationaux."

You will find among the other seeds the complete collection of that gentleman's contribution to the Agricultural World's Fair of 1856.

Now, my dear sir, you may already have heard that I have contrived to have the American Flag placed among the banners of the nations represented in the Palace of Industry, during the last Agricultural World's Fair. You know that to obtain from his Excellency the Minister of Agriculture, Commerce, and Public Works, who is animated with the best feelings towards America, to have the Star Spangled Banner hoisted upon the Palace of Industry, it was indispensable to have something of our own within. I therefore collected together the little I could find of objects pertaining to Agriculture, already exhibited last year, such as rice, cotton, tobacco, specimens of wood, essence of peppermint, a collection of the Annual Reports of the Society, that part of the Natural History of New-York relating to Agriculture, Pitt's Thrashing, Manny's and McCormick's Reaping Machines. With these I formed an exhibition which cut a rather small figure, for the number of objects amounted only to eight, for which we obtained—

1. First Prize Medal, (Gold,) with a premium of 600 francs, for Manny's Reaping Machine.

2. Second Prize Medal, (Silver,) with a premium of 400 francs, for McCormick's Reaping Machine.

3. First Prize Medal, (Gold,) with a premium of 600 francs, for Pitt's Thrashing Machine.

4. A Gold Medal to Hon. Colonel Allston, for his rice.

5. A Second Class Medal to Mr. Hotchkiss, for his essence of peppermint.

6. A Second Class Medal to Zadock Thompson, Esq., for his specimens of woods of the State of Vermont.

In all, three Gold Medals, one Silver Medal, and two Bronze Medals, besides 1600 francs premiums, for eight objects exhibited; and if there had been prizes awarded for Agricultural publications, New-York would have received the highest. Is not this a success of which we have reason to be proud? Yet we must not forget the good feelings which presided to the decision of the International Jury. This is an additional evidence of the brotherly affection of my beloved France for America! What would not have brought, then, a complete exhibition of the Agricultural wealth of the United States!

But now I rely upon American patriotism to prepare something splendid for the month of May, 1857. Let us have what we never had here yet, a collection, as complete as possible, of the Agricultural and Horticultural riches of North America; and rest assured that if it please the Lord to keep me to that time on this side of my grave, I shall spare no trouble to have full justice paid to your exhibition. But it would be necessary to have a general understanding with the Patent-Office and the Agricultural and Horticultural Societies, to have unity of action for an exhibition which is to reflect the highest honor to the whole community. Let us give to the Old World an example of the unanimity that can exist among Americans, when dignity, power and plenty of their great nation is to be exhibited. Such Fairs are neutral grounds, upon which every one must be anxious to appear.

"It will be necessary that a complete description of the objects transmitted should be given: for cereals, etc., for example, the name, the latitude, longitude, the elevation of the soil above the level of the sea; the stem and pods of beans, peas, etc.; the weight of corn per bushel; in a word, every information likely to convey an idea as exact as possible of the objects transmitted, and the mode of cultivation; and have these objects in sufficient quantities to be able, at the close of the Exhibition, to make twenty-five small collections destined to International Exchanges. Every nation adopting this principle, each one will have, in return for his own single collection, a complete series of what will have been exhibited. These divisions of collections will be prepared by our agency."

☞ We would call the attention of the farmers and mechanics of the State to this proposition of Mons. Vattemare. We shall take great pleasure in transmitting to France the collections which may be forwarded us for that purpose.

SHELTER WANTED.

SHELTER is a want of the first necessity in our climate of cold and storm, and no farmer may neglect, with any show of economy, sundry provisions of this nature. A portion of these wants are everywhere conceded—others are carelessly forgotten and neglected. We too often see farms upon which no provision has been made for the shelter of a portion of the stock through the winter. Sheep, colts, young cattle, and, perhaps, the cows, are left to shiver unprotected. Does the farmer know that he can ill afford the loss which results? To

keep an animal exposed to the weather in good order requires nearly double the food necessary when comfortably sheltered. And the increased value of the manure will repay the trouble attending the extra care then required. There is a heavy loss in the exposure of manures to the weather. The chief value of a fertilizer lies in that part which water will dissolve. Let it lie and bleach through the winter and spring, and a good share of its worth is gone; shelter it in beds and cellars, and a saving will be made—proving this the truest economy where manure is valued and good crops desired.—*Republican, Del. Pa.*

BREEDS OF CATTLE—EXPERIMENTS.

We know not how we can better aid our readers in judging of the comparative merits of the various breeds of cattle, than by publishing the *candidly expressed* opinions of practical men. Such is the following, from a correspondent of the *Mark Lane Express.* It will be seen that the writer has had a strong preference for the Durhams, and that he still prefers them, but doubts whether all that has been ascribed to them holds good. His suggestions about experiments are important, but whether such experiments could be carried out in this country so as to reach certain results, is perhaps doubtful.

We know a practical instance, bearing nearly on the point, of a gentleman who for several years was a successful breeder (for competition) of Short-horns, and himself a crack judge of the breed, and whose services in that capacity are often had in requisition, but who sold his herd, and is now, for the purpose of fattening on his farm, crossing—and we understand much to his satisfaction—with the polled Angus or Galloway. Now, unless this gentleman's practice belie his opinion, he evidently considers some other breed than the Short-horn better adapted for the profitable production of fat. But this may be mere individual caprice. True it may; but can any reliable authority be cited to prove that it is? Had the results of a train of experiments commencing with the births of a number of animals of pure and cross breeds, the amount and cost of food by each consumed, their progressive values with progressive years, and ultimate value at a certain age—had such been carefully made and duly recorded, we should now have been in a position to applaud the judgment or deplore the folly of paying 5, 6, 10, or 12 hundred guineas for an over-fed Short-horn bull. At the same time we do not wish to be understood for a moment as traducing the estimable qualities of the Short-horn. We regard the breed with a favorable eye; but what we want is to be shown a practical proof of their decided superiority. If that can be done, well and good; if not, their present extraordinarily high prices are only another proof that man is evidently a "gullible" animal. And again we repeat that nothing so likely as experiment would bring out the truths of the matter, and in the long run (to use a rather homely phrase) would hardly fail to give us the "right sow by the ear." And what, we ask, would be more in

consonance with the self-imposed duties of the Royal Agricultural Society, than the instituting and carrying on experiments tending to establish on firm grounds matters hitherto deemed doubtful, and which in time would be of such immense advantage to the farmer? It would indeed then blend "practice with science," and impart to husbandry in detail the stamp of indelible certainty. Our progress then, if slow, would at least be sure; and although to "hail a milestone in its path" required a vast amount of perseverance, yet the fact would be consoling that we had not arrived there by taking things for granted—that we had not formed our conclusions "at a jump"—but that we had stridden on with laborious precision, and at every step confirming our present practice or exposing its fallacies, denuding our most favorite theories of all supposititious matter, and exhibiting facts as they really are (however much at variance with present practice) in the broad light of day.

CARE OF LIVE STOCK.

As we have several times of late given our views on the care of cattle, and as we regard the subject important, especially at this season, we republish the following from the Boston *Cultivator*—the production, we suppose, of Sanford Howard, Esq., one of its editors, and one, in our opinion, eminently qualified to give advice in all matters pertaining to stock.

With the return of the season when domestic animals, in this latitude, must depend for subsistence directly on the hand of man, it behoves him to see that their wants are supplied. The commencement of winter is a somewhat critical period for stock. The frost has not only checked the growth of grass, but has lessened the nutriment in that which had previously grown. From inattention to this fact, the farmer is frequently mistaken in regard to a proper supply of food for his animals. It is true that with an abundance of grass, and shelter against storms, some kinds of stock can live abroad till snow falls. If any stock is thus left out, it should be yearling and two-year-old cattle, young horses, and strong, healthy sheep. Even these require attention, lest they lose flesh.

It is very important that animals should be in good order at the beginning of winter, and that they should hold their flesh, if practicable, till the most severe weather is past. A fat animal is less susceptible to cold than a lean one, and on this account requires less food to keep up the temperature of the system, or to supply the daily waste which the action of the vital organs occasions. The flesh, then, which animals have accumulated in summer and autumn, is a means of protection against the inclemencies of winter, and should be regarded as of equal importance with the hay or other material required to produce it. If animals pine away at this season, they must have extra food and shelter in mid-winter, or they will run down still lower, and by having less strength and energy to withstand the unfavorable influences that surround them, are more liable to the attacks of diseases, and suffer more from them. If the circumstances of the farmer are such that the supply of food must unavoidably be restricted before the stock can be turned to grass, the

short allowance should be resorted to towards spring, when the miseries resulting from severe cold will not be joined with the pangs of hunger.

Still there should at all times be a due observance of economy in feeding. In some parts of the country the waste of stock-food is great. In the West, where the facilities for obtaining this food are abundant, it may be argued (as it has been) that it is cheaper to waste, both in the expenditure of food and in the condition of the stock, than to provide shelter and use care in management. Whatever force this argument may have in a pecuniary sense, it has none in a benevolent or humane view. But the idea is carried too far, even on the score of profit, as the numerous and heavy losses which are frequently sustained by the death of sheep and cattle, might show. In sections where suitable shelter has been made for stock—as is usual on the best farms in New-England and the Middle States—the practice of economy in feeding is easy. The exact quantity which each animal needs may be given, and it may be placed in such a situation that it may be eaten in quiet under any state of the weather.

Considerable judgment is required to feed out the different articles comprising the winter's stock of food, to the best advantage. When animals first come to the barn, they should not at once be put on the poorest fodder—it would make too sudden a change in their diet—they should have that which they will readily eat, and the poorer kinds should be reserved for the keener appetites which cold weather will give. If root crops are to be fed out, the flat or common English turnip should be used first, because it will not keep long. The carrot will keep later, and the rutabaga or Swedish turnip still later.

In regard to the flat turnip, we may mention, in passing, that it is of more value, considering its cost of production, than is generally allowed. In a late visit to the farm of Mr. H. H. Peters, of Southboro', Mass., we were surprised at the quantity of this root grown in his corn-field. Just before the last hoeing of the corn, the turnip seed was sown broadcast over the ground. The earth was stirred enough in cultivating the corn to bury the turnip seed, and no further attention was given the crop till it was taken up. The field produced 200 to 300 bushels of turnips to the acre—not a remarkably large crop, to be sure, but it cost nothing but the sowing and gathering. We have seen other instances where it has been produced in the same way. It should be remarked, that it is necessary to *top* the corn—that is, cut the top stalk—to let in the sun and produce good-sized bulbs.

We have seen cattle and sheep fattened, and *well* fattened, on flat turnips. Mr. Webster, on his Marshfield farm, was in the habit of making excellent beef with turnips and salt hay. His neighbor, Hon. Seth Sprague, has done the same thing, and with advantage, too. Salt hay alone will barely keep animals in store condition.

We are indebted to Mr. Peters for some interesting facts in regard to the practice of Mr. Samuel Chamberlain, of Westboro', in feeding stock with turnips. In 1855, Mr. C. raised 2500 bushels of turnips, among eleven acres of corn, in the manner above described. He fattened fifteen farrow cows on turnips, commencing when the cows were first tied up in the barn, about the 10th of November.

The cows were then in quite low condition. They were fed with two bushels of turnips a day—one in the morning, and one in the evening. They were fed eleven weeks—had no grain of any kind, and consumed but very little hay—and were then sold for seven dollars per hundred, dressed, which was as much as *meal-fed* animals sold for in his neighborhood at the same time. The cows were of the ordinary stock, and weighed from 450 to 650 pounds dressed.

It is true that this trial lacks many of the points necessary to exact demonstration, but with all due allowances, is it not more than probable that the turnips furnished the cheapest food in this case that could have been produced?

DEEP DRAINING.—IRRIGATION.

THE following statement, from the *London Farmers' Magazine*, of the results of Prof. Way's investigations, on drainage water, will be read with interest by all who love to look into the nature of things, with a view of drawing thence practical instruction. The question alluded to in the first part is that of deep draining.

"The paper by Prof. Way, in the last number of the *Journal of the Royal Agricultural Society*, on the composition of the waters of land drainage and of rain, sets that question, we think, completely at rest, although his former researches appeared to give some countenance to it. His summing up is nearly in the following words:—1st, It appears that through every acre of land, whether naturally or artificially drained, there passes annually a quantity of water equal to 42.4 per cent. of the rainfall; and that in those districts where the rainfall amounts to 25 inches, the quantity of drainage-water is equal to about 240,000 gallons in that space of time. The next conclusion is this—and a very important one it is—that even when the land is very highly manured, this large quantity of water removes from the soil only inconsiderable portions of the most important mineral ingredients—namely, potash and phosphoric acid. With respect to ammonia, it appears that the quantity carried off from the land by drainage-water is also inconsiderable, but that nitrogen in the form of nitric acid is to be found in very large quantities in the water of land-drainage, particularly that derived from highly-manured land. It further appears, as the result of these investigations, that the quantity of nitrogen, in the form of ammonia and nitric acid, in rain water, is very much smaller than has been supposed, and quite inadequate of itself to account for the natural fertility that has been ascribed to it. It appears also that it is to these substances as existing at all times in the air, and absorbed from it by the soil and by plants, especially the former, that we are to look for an explanation of such natural phenomena. The quantity of ammonia in rain is greater than in drainage-water, which sufficiently attests the absorbing power of the soil for this alkali; but the nitric acid in rain does not account for the quantity found in drainage, even in the instances where it is present in the smallest quantity. Professor Way further continues that in all probability this nitric acid is due to the oxydation of the nitrogenous matter of manures, and especially takes place where such

manures are of a nature to prevent their perfect admixture with the soil. The more perfect admixture of manures with the soil is suggested as the best means of preventing so important a loss. The best method of effecting this complete admixture is left to the judgment of practical men. Lastly, Prof. Way, in taking leave of this subject, for the present, draws attention to the propriety of employing the drainage-water of highly-manured land, for the irrigation of meadow land in the neighborhood. In support of this recommendation, reference is made to the employment of surface drainage-waters by Lord Hatherton at Teddesley, and by the Duke of Portland at Clipstone. It is also stated that the drainage-water from some of the fields of Mr. Paine, the analysis of which demonstrated so great a loss of nitric acid, produced the utmost luxuriance in the grass of a meadow over which it was allowed to flow."

PROTECTION TO SHEEP IN WINTER.

If we were asked, "What is the greatest defect in the sheep management in the North-west?" we would answer, "The omission to provide comfortable shelter and barns." This is not a partial, but a very *general* fault, or defect. Seven-tenths of the flock of the North-west are fed upon the ground during the entire winter, in the open air, and never saw an inclosed shed, or even a roof over them. This is a glaring defect—a practice in which neither humanity nor the flock-master's purse is consulted. And so far as our observation has extended, it is a practice quite general over the Northern and Middle States, although within the past three years a great reform in this particular has been going on, which is alike creditable to the flock-master and agreeable to the sheep.

Humanity, indeed, would alone dictate, one would think, that dumb animals should not suffer from our neglect. In our unrest, though, and in our haste and excitement to get riches and power, we shut our ears and eyes to that gentle spirit of kindness and benevolence which would seek to throw its care and protection around all those creatures especially allotted to man for his comfort and support.

But aside from humane consideration, (which we regard as paramount,) the pecuniary interest of the flock-master or owner demands protection for his flock from storms and winter's cold. The *Mountain Shepherd's Manual* (Scotch) thus speaks—or thus spoke years ago on this subject: "Shelter is the first thing to be attended to in the management of sheep. While every good shepherd is decidedly hostile to their being confined, or to their being forced into shelter, whether they wish it or not, it cannot be too strongly recommended to all sheep farmers to put the means of avoiding the severity of stormy weather within the reach of their flocks at all times." This is old doctrine. The result of some recent experiments in the winter keeping of sheep, which have come under our own observation and knowledge, go to prove that it is as profitable to house sheep—"force them into the shelter"—as the writer above quoted would have it, as it is to stable horses or cattle. The idea that some hold out, that to house sheep and keep them comfortable is to make them tender, induce disease, is about as reasonable as to

suppose that man degenerates by having comfortable clothing and houses to dwell in.

1. Shelter obviates losses from disease and death. "Within the last ten years," says Mr. Morrell, "my flock, like thousands of others at the present time in this and other States, were denied the benefits of shelter; and the loss, in proportion to the severity of winters, varied from five to ten per cent. The diseases caused by their exposure were scab, peltrot, dysentery, and colds, which caused an excessive discharge of *mucus* from the nostrils; while many died, from no other cause, apparently, than sheer poverty of condition. Since, however, my sheep have been protected, the deaths have not exceeded one and a half per cent. in regard to number, and if comparative value were the standard, it would not be considered of any moment, as the loss has been mostly among spring lambs—so from bad nursing, and old ewes, which, from superiority of fleece or carcase, were retained thus long, to breed from. If this is contrasted with the per centage of loss before the resort to protection, it will readily dispel the *delusion* that shelter enervates the constitution of sheep, or is in any wise an inducing cause of disease; for since protected, no epidemic has prevailed among them, and disease of any kind is rare indeed, and only occurring in individual cases." In the case, or experiments alluded to above, where sheep have been housed, the losses by disease or accident have not been a half of one per cent. And such, we are well assured, will be the universal benefits of the practice. Sheep, however, must have plenty of pure air, and a clean, well-littered bed daily, in such cases.

2. Shelter increases the weight of the fleece, and improves its qualities. In fattening animals, every farmer knows that mildness and equableness of temperature is of paramount importance to the laying on of flesh and fat. The same rule holds good in the keeping of all store animals, and in the production of wool as well as flesh.

If the food which a sheep takes must all be expended in the preservation of the tissues of the body, and in keeping up the natural animal heat, none can be expended in the production of wool; but if the animal is kept quiet and warm—thus avoiding the wasting of the tissues by exercise, and the necessity of using the food for promoting warmth, the latter will be appropriated in large ratio to the growth of wool. The flesh secretions and the wool secretions are derived from the same source; consequently, the more flesh and fat are wasted on account of exposure in the open fields, the less must be the produce of wool.

"The additional softness of the fleece, and evenness and soundness of the fiber, may be traced to the same cause which increases its weight; for if the cutaneous glands are full and healthy, which follows good condition, greater supplies of yolk are imparted to the wool, conferring greater pliability, elasticity and brilliancy, and at the same time promoting greater equality in the growth of the filament. Hence it is in Spain, Australia, and other countries corresponding in mild ness and equability of climate, the wool of the sheep possesses a deg ree of softness and uniformity of growth unequaled by any other, which arises for the most part from the evenness of the condition of the sheep throughout the year, and consequently from the regular supply of yolk, not being checked in its flow by extreme cold. From this

cause, and this alone, the Spanish Merino, and Australian, to use the phraseology of manufacturers, 'work more kindly' than all other fine wools; and less wastage follows in the process of cloth-making, occasioned by their soundness and toughness."

3. Shelter increases the number of lambs. It is very often the case—where flocks are kept without shelter, and even where full feeding has been the rule—that many of the ewes get greatly reduced and impoverished, before weaning time arrives. In such cases, without strength themselves, and without milk, the character of the offspring may well be conceived. If they live they are puny and ill-formed, and the next winter will make these its early victims. But give good shelter, and both dams and offsprings will be strong and healthy; will get a good start early, and grow up with well-formed and sound constitutions.

4. Shelter saves provender. This proposition is so well known to be true—so thoroughly fixed in the minds of all intelligent and observing men—that we deem it unnecessary to give reasons or facts in its support. The scientific reasoning in corroboration, we may give at some future time.

5. Shelter is the means of making additional manure. Where sheep are permitted to run everywhere, the manure may be said to be nearly or wholly wasted. And this is no trifling loss, as it is of a most superior quality. Manure is the farmer's capital stock, and every prudent farmer will see to it that it is not diminished; and if it is protected from the weather, it is not wasted away nor dissipated by the winds. In European countries this matter is deemed of so much importance as to warrant the trouble of folding nights throughout the year, and thus concentrate or save the manure and apply it where most needed. The American wool-grower may in the same way make his flocks not only add to his gains in fleece, but in their increase of number, better health, in the saving of feed, and increasing his manure heap, by affording good and proper shelters. We have thus called early attention to this matter, that farmers may not be amiss in their duty to those gentle and harmless creatures, which are dependent on them for protection.—*Louisville, Ky., Commercial Review.*

COMPOSTS.

The business of forming composts is one in which we may derive important assistance from chemistry. Every plant is composed of certain constituents, derived either directly from the soil, or through the medium of the atmosphere. It has been conclusively shown by experiment, that the best manure that can be applied to the grape-vine, is a compost formed principally of its own foliage. In like manner we find that wheat straw, and the haulm of the potato plant constitute the best manures for the sustenance of those crops. Analogy also teaches us that the residuum of all vegetables, or that portion of them which remains after decomposition, contains the true *pabulum* of their respective tribes, and that in no way can their growth be more effectually promoted than by their application. This is, indeed, the course nature pursues. In our forests the only aliment the trees receive is furnished by the decay of the annual

foliage, with the exception of a certain though unascertained amount of atmospheric food, derived through the medium of their leaves, and which is also of vegetable origin. These facts indicate a definite course to be pursued in feeding our crops. All vegetable matters are replete with the principles of reproduction, and should consequently be economized and turned to profitable account. Our lands are in want of all the fructifying substances we can procure, and this is one of the most prolific sources which we can hopefully apply.—*Germantown Telegraph.*

ON INSECTS:

With Descriptions and Directions useful to the Farmer, Gardener, etc.

We proceed in our endeavor to awaken an interest in, and to furnish facilities for comprehending, the dull details of this branch of natural science. We do not forget the suggestions we have made in reference to frame-work, and stagings, and the like; but we are certain that we shall receive the thanks of those who wish to acquire valuable information on this subject for presenting first, in a new form, some of these foundation timbers, properly fitted for their place in the grand whole. They are so adapted to each other as to require no effort in giving each its proper place, or in forming and completing at least a portion of a graceful, pleasing structure. The more rough timbers shall be kept out of sight, as far as is possible.

All our readers are, of course, aware, that to find any description of a particular insect, in the books, he must refer primarily to the order in which it belongs. How shall this be done by one who knows but little, or even nothing, of the science. To follow the usual course, requires considerable familiarity with the science, and no little practice. But careful attention to the following simple suggestions will enable one to do this without difficulty. If not, the whole thing will be clear before we close this article.

1. If the insect have four wings, the outer pair, or "wing-covers," being thick and opaque, and *meeting in a straight line, on the top of the back*, while the under wings are filmy, and folded transversely, and also a biting mouth, it belongs to the order Coleoptera. Beetles represent this division.

2. If it have two thick wing-covers, *overlapping a little on the back*, and two thin under wings, larger than their covers, which lie folded like a fan, in plaits, and a biting mouth, it belongs to the order, Orthoptera. Such are cockroaches, crickets, etc.

3. If it have four netted wings, the hinder ones being the largest, and have a biting mouth, it belongs to the order Neuroptera. Such are dragon-flies, May-flies, etc. These insects, by the way, have no piercer or sting.

4. If it have four wings, the upper ones being thick at base, with thinner extremities, or sometimes thin and transparent throughout, and a sucking mouth, it belongs to the order HEMIPTERA. Bugs, plant-lice, etc., are of this order.

5. If it have four wings, all covered with branny scales, and a sucking mouth, it belongs to the order LEPIDOPTERA. The wings of these insects slope like the two sides of a roof. Butterflies and moths are examples.

6. If it have four veined wings, the hinder pair being the smallest, and have a piercer or sting, it belongs to the order HYMENOPTERA. Such are ants, bees, etc.

7. If it have but two wings, and a sucking mouth, it belongs to the order DIPTERA. Musquitoes, flies, etc., are examples.

This classification was given in a modified form on pages 72 and 73 of our eighth volume. With few exceptions in the insects that need come under the farmer's observation, the wings alone would determine with tolerable certainty the order to which it belongs, and thus all difficulty would be removed, but for the fact that in some species, as that of the *ant*, the individuals of one sex are sometimes without wings, while the other sex has them. But where wings are present, this description will always apply. We refer here, of course, as already suggested, to insects after they have completed their transformations. Many of them, as all know, are most destructive to vegetation before these changes take place. But they propagate only when in the perfect form. It is very difficult for the skillful entomologist to distinguish between some of the different kinds of grubs, worms, and catterpillars, merely from their appearance, and utterly impossible for one entirely unlearned. Hence we take other things into account, with such forms of insect life, as their position, habits, etc. Even this, by far the most difficult part of our subject, we hope to make useful and agreeable to the reader.

The differences between a biting mouth, and a mouth for sucking liquids, are quite apparent, and the following description will enable any one to determine which of these is found on any given insect, with the help of an ordinary microscope, and often by the naked eye.

Biting insects are furnished with an under and upper lip, with two jaws or nippers, on each side, which move sidewise, and not up and down, and with four or six little jointed *palpi* or feelers—two on the lower lip, and one or two on each lower jaw.

Sucking insects have a mouth furnished with a spiral tube, as in butterflies; or with a hard, hollow proboscis, fitted for piercing, as in musquitoes; or with a softer one, ending with a flattened or fleshy lip, as in common flies; or with a long, hard, and jointed beak, bent

under the breast, when not in use, which is designed for making punctures, and thus obtaining and drawing out liquid nourishment. This form may be seen in bugs, plant-lice, etc.

If you would thoroughly understand the differences here described, in the structure of the sucking mouth, or *proboscis*, pursue the practice we adopted many years ago, and suffer a common house-fly to rest upon the back of your hand and leisurely make experiments upon one and another part of it, to ascertain if he can find nutriment there. You can thus see very clearly the shape of *his* proboscis. If you then suffer a musquito to try his needle-formed proboscis, in the same way, you will easily perceive the difference. These experiments may be pursued with other insects, placed upon some substance which they frequent and love to eat, and your mind will become perfectly clear on this point.

The *piercer* may contain a sting, which is connected with a sack of poison or venom; or it may be merely a flexible, jointed tube, used in conducting the eggs of the insect into crevices and holes; or, again, as in a few species, it may contain a saw-like instrument for making holes in trees, in which the eggs are to be deposited.

Being able thus to designate the order of any individual to be examined, it will not be difficult, by turning to that order in any scientific treatise which may be at hand, to look at the various descriptions of genera and species, hastily, and find some one which answers to that before you. We refer now, of course, to a mode of examination, which is the best under the circumstances. We purpose hereafter to furnish much better means, even for those not familiar with the science.

After a careful reading of what we have written, if you turn to the technical descriptions, given by Linnæus, of the different orders, you will find that they have lost, in good degree, the repulsive appearance which they once had, as your eye accidentally rested upon them. They are as follows:

Coleoptera. Wings two, covered by two shells, divided by a longitudinal suture.

Orthoptera. Wings four, the two anterior ones leathery.

Hemiptera. Shells or covers of the wings somewhat soft, and incumbent on each other.

Lepidoptera. Wings four, imbricated with minute scales.

Neuroptera. Wings four, naked, transparent, reticulated with veins or nerves.

Hymenoptera. Wings four, membranous, tail of the female armed with a sting.

Diptera. Wings two.

But we will not leave this *stage* of our subject without another suggestion, which cannot fail to remove any remaining difficulty, if such exists. We have constructed the following table, which, so far as the application to this science is concerned, may claim to be original. But the same system has been adopted in Botany, by some of our best authors, and relieves that beautiful science of many troublesome difficulties. Hence we apply it (on trial) in this department of natural history. Its merit consists in this, that the mind of the learner is directed by it to a *single point*, and that point is described and set forth, leaving for the inquirer, not to mark out a plan for himself, but merely to say yea or nay, in each successive step. We first exhibit the table, and then illustrate its use.

TABLE.

1. Four wings. 2.
1. Two wings. Diptera.
   2. A sucking mouth. 3.
   2. A biting mouth. 4.
3. Upper wings thick at base, with thinner extremities. Hemiptera.
3. All the wings covered with branny scales. Lepidoptera.
   4. Anterior or outer wings (wing-covers) horny, meeting in a straight line on the back of the insect, posterior wings (or under wings) being filmy. Coleoptera.
   4. Wing-covers thick, and overlapping a little on the back of the insect, and two larger, thin wings, folded like a fan, underneath. Orthoptera.
   4. Four netted wings, hinder ones nearly the size of the anterior. Neuroptera.
   4. Four netted, membranous wings, the posterior being smaller than the anterior. Hymenoptera.

Note, that in this last-mentioned order, Hymenoptera, the female insect is usually provided with a piercer or sting.

In using this table, we first inquire whether the insect has *four* wings, or only *two*. If only two, it belongs to the order Diptera. If it has four, then go on to the number designated, which is 2. Here you inquire whether it has a *sucking* or a *biting* mouth, and if a sucking mouth, you go on to 3. At 3, you look at the texture of its wings. If the upper wings are "thick at base," etc., it belongs to the order Hemiptera. If all the wings are "covered with branny scales," it is of the order Lepidoptera.

But, perhaps, when we came to the second inquiry, we found it had a *biting mouth*. If so, we must pass on from 2 to 4, as directed by the figure. Here we have a single point to investigate, and according as the specimen examined answers to one or to the other of these four

descriptions, each of which is numbered 4, it belongs to one or the other order named in connection with it.

With all perfect insects, which are not *anomalies*, or exceptions, this plan is entirely free from difficulty, and so far as we use it here, it seems just what one needs, who has no confidence in himself, to attack a system which includes several thousand species, without some guide or without plainer directions than can be found in any extended scientific treatise. P.

TILLERING—BY A NORFOLK (ENGLAND) FARMER.

On this subject most, if not all of the writers have fallen into a singular mistake as to the origin of the tillers of cereal plants. It is laid down by them as an established fact that the tillers proceed from the coronal roots, which *invariably* form on the plant just below the surface of the soil. This is so confidently laid down by every writer I have consulted, that I took it for granted that it was correct; until having recently had extensive opportunity of examining for myself, I have at once discovered, what any other person may do with very little trouble, that the tillers *do not spring from the coronal, but the seminal roots;* and that, in point of fact, the former, so far from being an essential appendage to the plant, are entirely accidental in their formation. They proceed from the first knot or joint formed in the stem, *provided* that knot is beneath the surface; but if, as is frequently the case, it is *above* the surface of the soil, no coronal roots are formed, and the plant is wholly supported by the seminal roots, which in *all* cases constitute the main source of nourishment to the plant. I have now under examination the stubble of a number of plants of this year's growth, some of which have from twenty-five to thirty stems. In all these the tillers spring from the seminal roots, without any exception. Some of them throw out coronal roots; but others, which have no knot below the surface, have also no coronal roots, but are equally strong in the stem and heavy in the ear.

I have laid the more stress upon this circumstance, because even Le Couteur has fallen into the same error, and written upon the presumption that the coronal roots are an essential and invariable part of the plant; leaving his readers to infer, that without them there would be no tillering. This also has led to another error, namely, that after a certain time (supposed to be the month of April) the seminal roots cease to impart nourishment to the plant, which then and after derives its support from the coronal roots alone. It was in an investigation of this assumption that I discovered the errors regarding the tillering question; and I therefore request those who have taken up with the commonly-received view of the case, to do as I have done—examine for themselves: and they will have no difficulty in discovering the true state of the case. The best way will be to wash the roots first from all the mold, and let them afterwards dry, when the examination can be made with more ease and precision.

The establishment of this fact greatly strengthens the arguments in favor of deep sowing, by which the chance of the formation of a joint below the surface is rendered more certain, which also insures

the formation of coronal roots. These undoubtedly are of great utility in imparting a more firm hold upon the soil, as well as additional nourishment to the plant, and consequently lessens the danger of the corn being lodged.

The fecundity of the cereal plants, and their reproduction by transplanting the offsets or tillers, is truly wonderful. We read of from forty to one hundred and twenty ears being grown from one root or grain; and there is an account in a work by Sir Kenelm Digby, written in 1660, of a plant of barley in the possession of "the Fathers of the Christian Doctrine" at Paris, who kept it for many years as a curiosity. This plant, which was the produce of one grain, had 249 ears, from which were counted above 18,000 grains of barley. In the Cambridge case, which is mentioned above, if the plants were set at one foot distance, it would insure a crop of ten quarters per acre, which under the circumstances was not an apocryphal produce; and at the average number of stems was forty-two, less than a foot would leave them very much crowded. Thus, there are in an acre 43,560 feet, which, divided by 500, gives 87; then multiply this by $3\frac{3}{4}$ pecks, the produce of the 500 plants, and we obtain 327 pecks, or about ten quarters per acre. The soil on which this was raised was a light blackish one, with a gravelly subsoil; part was well manured, and part without any manure whatever; but there was no perceptible difference in the strength of the straw or size of the ear.—*Farmers' Magazine.*

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

THE FARMER'S HOME.

We commend the following excellent communication from our valued correspondent, as worthy of a very careful consideration. If the suggestions which it contains were carried out in their true spirit, through all the arrangements of the family, we believe that immense good would result, both in producing reformation where reformation is needed, and in affording security to those now in the early morning of their days.—Eds. P., L., and A.

During the past year I spent several months in a rich agricultural district. Having been bred a farmer, I felt at home, and took an interest in observing the improvements which have been introduced into farming operations.

The power of mind over matter is strikingly illustrated in the invention and construction of machinery, and its application to the farm. The number of machines patented yearly, for performing almost every species of work, so multiplies the facilities for agricultural labor, that the plodding toil of months, in the times of our sires, is now performed in a less number of days, with greater ease.

But while our independent farmers are supplying themselves with labor-saving machinery, stocking their farms with the most improved breeds, and adopting those modes of culture which science and ex-

periment point out as most productive, we do not generally find the *home* improvements progressing equally.

The young or middle-aged man who can appreciate the value of improvements which multiply dollars and cents, often, from education and habit, thinks not of increasing the attractions of his home by increasing its comforts and beauties. Children grow up around him without enjoying advantages which his abundance should secure to them, and become contented to possess wealth, without acquiring the means which give position and influence among intelligent and cultivated people. Or else, becoming disgusted with farm-life, they go out into the crowded cities and villages, and seek other occupations.

Many men have so much animal in their compositions, they cannot appreciate beauty of a higher grade than that which they see in a fine horse or bull. I do not talk to such—there is nothing in common between us; their mission is not a high one, and they may rest satisfied to do the labor of slaves. They are capable of nothing which shall develop the refinement and grace of which the farmer's home is susceptible.

It is the duty of the farmer to educate his children well, so far as his means will allow, and to make their home smile with those adornments which are within his reach, that they may not, as their minds become cultivated, learn to look upon their father's occupation with distate. The man who has broad acres teeming with wealth, and barns groaning with their fullness, surely can spare time to look to the welfare of his children, and means for gratifying their tastes. He may teach them to honor and love his occupation, if it is not made repulsive to their sensibilities. It is not necessary, even in the busiest season, that he should appear before his family at table, stripped of his coat, and his wife fill her place with sleeves above her elbows. It is not necessary that he should stretch himself on the floor for rest, when at a trifling expense, his house may be supplied with comfortable lounges. It is not necessary for the family to occupy the kitchen, when there is the "spare room" in its loneliness waiting for "company."

Spare rooms are a nuisance in a country house, usually occupying the pleasantest portion, and wearing a prim look, implying that they are to be opened only on special occasions. When I enter such, I feel tempted to set the chairs to dancing around, wheel the tables out from their precise positions, and to give all things the appearance of having stopped in the midst of a general "hop." "The spare room," if properly furnished with books and papers, has a genial atmosphere that should enable the sons and daughters of the farm to cultivate tastes which elevate them far above those who only think of filling the purse.

The farmer's home, when graced by intelligence and cultivation, and giving evidence, in all its surroundings, of the fine sensibilities of its inmates, is the place where, before all others, I would seek for the real enjoyment of life. JUNE ISLE.

FACTS AND DEFINITIONS.—BY STOCKHARDT.

"GRAPES, carrots, and many fruits and roots have a sweet taste; they contain sugar. The branches and leaves of the grape-vine have a sour taste; they contain an *acid salt.* Those of the wormwood have a bitter taste; they contain a peculiar *bitter principle.* The latter also possesses a powerful odor, which proceeds from a *volatile oil.* In the seed of our various kinds of grain, and in the tubers of the potato plant, we find a substance resembling meal, *starch;* in the seed of the rape and flax plants, a lubricous fluid, *fat oil.* From the cherry and plum trees there exudes a viscous matter, soluble in water; from fir and pine trees a similar product, but insoluble in water; we call the former *gum*, the latter *resin.* That which gives mechanical support to plants, forming as it were their bones and blood-vessels, receives the name of *vegetable fiber*, or when it has become tough, insoluble, or indigestible, the name of *woody fiber.* In the sap of plants we meet with a substance which coägulates by boiling, like the white of an egg or the albumen of the blood; in peas or other leguminous fruits, a substance which is extremely like cheese; in the seed of rye, wheat, oats, and other kinds of grain, a substance whose composition is identical with that of the flesh of animals; the first is called *vegetable albumen*, the second *vegetable casein*, and the third *gluten.* Finally, on the combustion of the plant, we find a residue consisting of an earthy or saline powder, which neither burns up nor volatilizes by heat; this contains its *mineral constituents.*"

STOUT RYE IN NANTUCKET.

E. W. GARDNER, Esq., of Nantucket, raised twenty-two bushels of rye on a half acre. His manner of growing it, as stated below, may be a matter of interest to those who have lands bordering on the sea. He says: "The land on which this rye grew, is sand and loam, on a subsoil of red sand and gravel. It had been used for several years in grass without any manure, until it was scarcely worth mowing. In August of last year, I put upon it broadcast about thirty-seven full cart-loads of what we usually denominate 'kelp,' but which, in fact, is sea-mosses, of various kinds, including a large portion of 'Caragheen,' or 'Irish moss.' This was plowed in at a depth of about ten inches, and sown with about one-third of a bushel of rye, a peck of herds-grass, and five pounds of clover-seed, early in September. The rye grew to about six feet in height, and from early in the Spring until it was ripe, its beauty attracted the attention of all passers by. About the time of the last rain preceding our great drought, I count-

ed the grains of several heads in full milk, which numbered from fifty to seventy-two, and at that time it gave promise of a good yield; but the drought ripened it prematurely, and it yielded only twenty-two bushels of grain, and about two tons of straw.

TOO MUCH LAND.

We see this heading in papers from every quarter, agricultural and others—"Too much land," "Too much land." In part, it is true;—as a nation, we have too much land till more are born here, or come here, to occupy it; and then again we have too much land, till more manufacturing is done among us, to create demand for produce; and our policy is not yet of a kind to hasten an American supply of American wants, quite as fast as the farming interest requires, and we will add, *all other interests*, for when the farmer thrives, all thrive. Stick a pin there.

This old heading, "Too much land," is partly true in another sense; there are individuals and companies, who are getting quite too much of God's heritage into their own clutches. We do not believe in land monopolies, would rather see any thing else monopolized; but we are no politician, and know not that it can be prevented. In the sense in which the stale motto is used, that of charging that American farmers have too much land, it is partly true, for some farmers who have ten acres, have too much; and it is partly false, for others, who have one thousand acres, have not a rood more than they ought to have. We know farmers of ten acres, who have just nine and three-quarter acres too much; and we know others with a thousand acres, from whom we would not take away a rod.

To estimate how much land one should undertake to cultivate, he should first estimate himself. If he is a man of small means, little energy, not much intelligence, reading but one agricultural paper, and perhaps none, unable and unwilling to drive a *smashing* business, ten acres inland, and less near a city, is enough. But if he is a man of energy, conscious of intelligence up to the mark of directing his own and others' labor, willing to be bothered and yet bent on going ahead, quick to seek new information from any source—books, papers, wiser heads, nature herself; in short, if he believes that he possesses the ability, and is willing to do a large business and keep the irons from burning, we see no reason why he should be limited in the application of these talents to farming, any more than if he had chosen to use them in any other direction. We seldom hear the enterprising merchant warned that his store is too large, so long as things go well in it; and cannot as much energy be employed, as controlling an influence

over the labor of employees, as pervading an insight on the farm, as in the counting-room. We are not much in favor of millionaires. We would prefer a state of things in which the many should have a competency. But we do not see why, if we are to have our merchant princes, we may not have our farmer princes also; and if the merchant may enlarge his business up to the outside of his ability to manage it successfully, why may not the farmer? We are no apologist for one man and a boy *running over* a thousand acres, nor a hundred acres, nor ten even; but whoever can *cultivate* ten acres, or a hundred, or even a thousand, let him do it. We go for measuring the man first, and then giving him a field commensurate with his ability. Small farming in a thorough way, with deep plowing, thorough pulverization, large crops, a wise expenditure of them, and a snug thrift as the result, is a good thing. No one need be ashamed of being a good farmer of a few acres. But we insist that large farming is a good thing also. If any man possesses the ability to farm many acres *well*, give rope. The profits of large farming *may be made* greater than those of small farming possibly can be, because in the former more extensive machinery can be introduced, the cost of production can thereby be diminished, and the margin between cost and sale prices enlarged.

N.

UNDERDRAINING WITH STONE.

My experience in that line is of seventeen years' practice. In 1839 I ditched around about four acres of the most perfect bog swamp I ever saw. The ditch was from two and a half to four feet deep, according to the ground through which it passed. It was dug as narrow as it could be and let the men use the pick and long-handle shovel. This ditch surrounded the swamp, keeping mostly in ground dry on the surface; still the outlet went through deep muck. I filled from fourteen to eighteen inches with stone taken from the four fields about the swamp, clearing them of surface stone completely. Through this muck bed where the ditch was compelled to run, it was necessary to place old boards at the sides and bottom, making a sort of rude trough in which the stone were placed and bogs thrown on them. The stone were all slightly covered with either straw, turf, or fine shavings, (which I consider best,) before the ditch was filled; then with a plough the work was soon finished by turning in the dirt taken from it.

After its completion, there were drawn from the swamp one hundred and twenty-eight large cart-loads of bogs that were counted, and after that the boys said they thought they drew as many more, of which they lost account, but all done in the same season. The first crop raised on it was buckwheat, and since that time up to the present day, that swamp has been planted, sowed, pastured or mown, as other dry land on the farm, the water from the outlet running freely and steadily ever since the work was finished, without any intermission.

At different times since 1839, I have underdrained wet land, (sur-

rounding it in almost every instance,) always using small stone, taking some care in placing the bottom course; after that throwing them in promiscuously, and never yet have failed of reclaiming the land to my entire satisfaction.

I have probably about sixteen acres of land tripled in value by this method.

I forgot to mention that I failed in one instance, and that was for want of sufficient fall in the outlet.—C. Du Bois, *in Country Gentleman.*

TREE CULTURE.

On the Atlantic slope of the United States it is no unusual thing to come in contact with lands so filled with hedges, that, with their shallowness of soil, it becomes impossible to give them the tillage necessary to insure remunerative crops. Then again there are hill-sides so steep that plowing renders the soil so open, that subsequent rains wash it into the lower lands, and thus, instead of its fertility being increased, its impoverishment actually follows.

Reason fully teaches that lands in either of the above cases are not adapted to purposes of cultivation, and observation goes fully to establish the conclusion. If not already so, they are fast becoming the waste lands of the country. The question then comes up, not only to the owner of such lands, but also to the national economist, What can be done not only to keep them in as good condition as they now are, but, if possible, to increase their value?

We know of only one answer to be given to such an interrogatory, and that is, to cover them with trees—bring them into a forest state as soon as possible. And here an objection will arise in the minds of many of our calculating farmers, who are eager for present profits from their lands. In the first place, the expense attending the starting of the forest; and the imaginary loss of the use of land until the timber is fit for removal.

These objections are both fallacious. The seeds of valuable timber trees are easily gathered, and may be sown with a crop which of itself will pay the expense of cultivation of the land, after the harvest of which the young trees must be allowed to monopolize the soil. The trees will grow rapidly from the seed, and the leaves, increasing in quantity from year to year as the size of the trees increases, by falling on the ground, and in each succeeding year will give them more rapid growth.

Or if the process of raising trees from seed seem too tedious, they may be successfully transplanted to such localities. Take the yellow locust, for instance, whose value for timber is well known, and which ranks as a rapid-growing tree. These are easily raised from seed, and

succeed well if transplanted; and what renders them more valuable for covering such lands, their tendency is to increase rather than diminish the growth of grass. Cattle will not injure them, in consequence of their thorns, as they will other trees, and they have a remarkable propensity for throwing up new shoots from their roots, so that a less number may be set upon an acre with a prospect of having the ground well covered, than of almost any other kind of tree.

The growth of this tree is so rapid that it will bear cutting in ten years, though it will be more economical to allow it to grow fifteen or twenty years. In the latter period, the income on an acre will give a good percentage. The second crop will come up and grow more vigorous than the first.

As a matter of public economy, the several States, or the nation, would do well to offer to individuals encouragement for improving such lands by tree culture. At least let all lands planted or sown to forest trees be exempt from taxation for a given number, or all the years while it remains unavailable to the owner; for the wealth of the State and the nation would be increased by the increased growth of valuable timber, in as great a ratio as would that of the farmer who, for a series of years, gives up the use of his land to the growth of a commodity the absence of which would be severely felt by all.

Yours truly, WM. BACON.

RICHMOND, MASS., Dec. 16, 1856.

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

MESSRS EDITORS:—East Tennessee now presents a dreary aspect. Since its settlement by Christian people no one year has yielded, *communibus annis per capita*, so poor a crop. "Cause," the drought. The wheat crop was, however, a medium one, the grain well filled, sound, plump, and healthy. Oats very short and light. Grasses were consequently thin, and the hay not heavy; and as for corn, the staple of the district, it is of less yield than the "memory of man runneth back to the contrary." East of Knoxville, and to the Virginia line, the corn crop, perhaps, justly speaking, will not be one third the usual gatherings in the Tennessee Valley. West of Knoxville, the crops are better. To add to the calamity of the East Tennessee farmer, in 1856, the army worm has visited us and has played havoc with our growing clover, meadows, and grazing grounds. Many of us hesitated to sow wheat as early as usual; some have sown the same land twice, and yet, on account of the ravages of this insect, have now but a poor stand. It has not been our misfortune to have had a visit from these enemies since 1829 till 1856.

Their work seemed to be so secretly performed, so thoroughly done, so early begun and ended, that our very best farmers could

devise no means of attack or defense. Perhaps some reader of your valuable journal, in the event you, Messrs. Editors, are unable, could tell us how hereafter to fortify our verdant fields against this occult enemy. This short synopsis may give you an idea how our lovely valleys look. So gleaned are our adjacent knobs, so bare and dreary, the winter sets upon us with our stock generally thin and weak for the season. Notwithstanding all this scarcity of grain and provender, prices of living animals domesticated on the farm remain fair on our side. The pork crop may not be so abundant, but doubtless the hogs will be heavier, and the bacon, as a consequence, better than last year. Our wheat is hardly as quick sale at the prices of last year, there being, as per our advices, but little foreign demand for this grain here. It is a little unusual that corn shelled, is worth more money than wheat per bushel. Speculators and others driving hogs from and through this district to market, have bought and fed on wheat instead of corn as formerly.

That portion of Tennessee lying betwixt the Tennessee river and Cumberland mountain, called Middle Tennessee, has this year yielded a very fair crop of all kinds. This last district produces cotton to a very considerable extent; otherwise their mode of farming is pretty much like ours. We are imitating them in putting to work here and there a steam saw and grist-mill. Sometimes a thread and cloth factory is now seen in our district.

Whilst our arable lands have advanced in value at least one hundred per cent. within the last ten years, and are still progressing, our merchants were never more safe in their business. Our currency is plenty, and carries confidence wherever it goes. Tennessee is a fast State. Her minerals are now being successfully wrought and transported. Her railroads are completing as rapidly as may be. Her villages are ornamented with beautiful churches and college buildings. Her valleys specked with neat farm houses, surrounded with good barns, etc. Nor in any country can a more frugal and industrious farming community be found. Looking forward to a more propitious season in 1857, and in a firm reliance in the Divine benignity, our farmers are social and cheerful, the first idea given you herewith notwithstanding. A. L. B.

Mill-Bend, Tenn., December, 1856.

The writer may expect an article on the question of "attack and defense" against the army worm, and other enemies of the wheat crop, at no distant day. In the mean time, will our correspondents make a note of his request. The subject is an important one, and there will be room enough for us and them. The reader will find something on this subject in our October and November numbers, to be followed by more, and of a more practical nature, hereafter.

THE WYANDOT CORN.

We have made trial of the Wyandot Corn at Roslyn, on Long-Island, the present season. About a quarter of an acre was planted from a single ear received from Mr. J. C. Thompson, of Tompkinsville, Staten Island; a grain in each hill. The soil was not entirely suitable to this kind of corn, or, indeed, any other, with the exception of about one quarter of it, where there was a good rich mold. In that part, also, the mice did considerable damage by eating the grains before they came up. The experiment on the more fertile part of the spot planted with this corn was perfectly satisfactory. From each grain sprouted from four to eight or nine vigorous stalks, ten or twelve feet in height, on each of which was one, and sometimes two ears. The corn will ripen well this season. From our experience of its cultivation we should think it a variety worth trying extensively in this neighborhood, and have no doubt whatever of its being a most valuable and desirable sort for those parts of the United States where the season is a little longer than here, on account of its extraordinary power of reproduction, yielding, as it does, eight or ten ears to a single grain committed to the earth.—*New-York Evening Post.*

CARROTS FOR HORSES.

Lately going to the country to spend a few weeks with a friend of mine, I drove a very handsome horse, and a good 'un, but was always annoyed about his coat—it was more like a lot of bristles than a horse's smooth skin, and all the grooming he could get "wouldn't do it no good." My friend, who is a great horse breeder and fancier, made me try giving him a few raw carrots every day to eat out of my hand, saying that he would have a good smooth coat in three weeks; and he was right, for in that time my horse had a beautiful, sleek, glossy coat, and all from eating a few raw carrots daily. He tells me it is infallible.—*Cor. Porter's Spirit of the Times.*

SMALL HORSES.

The arguments may all be in favor of great size, but the facts are all the other way. Large horses are more liable to stumble and be lame than those of the middle size. They are clumsy, and cannot fill themselves so quick. The largest of any class is unnatural growth. They have risen above the usual mark, and it costs more to keep them in position than it would were they on a level with their species. "Follow Nature," is a rule never to be forgotten by farmers. Large men are not the best for business; large hogs are not the hogs to fatten best; and large hens are not the best to lay eggs. Extremes are to be avoided. We want well-formed animals rather than such as have large bones. Odd as it may be to the theorist, short-legged soldiers are better on the march, and officers say they endure hardship longer than those of longer limbs. On choosing a horse, take care, by all means, that his legs are short. If they are long and split apart like a pair of dividers, never inquire the price of the dealer. Make no offer.—*Indiana Farmer.*

Orchards.—In your apple orchards, young or old, remove the dead trees, or those that must soon die. Then prepare the ground by deep spading, and by generous manuring, with well rotted manure, leaf-mold, and a sprinkling of old lime. If this kind of manure is generously applied, apple trees may be wisely planted where apple trees have stood before. There is, we know, a feeling that it is not the best. But we think it is often best; and the evils that are feared may be avoided, if plenty of the right kind of manure is used. Plant trees as soon as the leaves have fallen off, and when you have done the work, drive a stake near by, where the roots of the tree may not be hurt by it, and tie the tree to it. This will prevent the disturbance of the tree by the frosts of winter. Remember that the fall is deemed by the best orchardists the best time for setting out apple trees.—*Ohio Farmer.*

Senior Editor's Table.

We wish our readers all a happy new year; and here, at its threshold, we pledge them our best endeavors to do, with our might, all we can, in our line, to contribute to their material prosperity, and consequently to their happiness. By heeding the suggestions of our associate, and those in our business notices, they will see that they can do much to promote ours; and we believe they will see that we have so associated our interests with theirs, that while they advance the one, they will not fail to advance the other also.

Of the injustice of paying subscribers being taxed, as they virtually are, by all publications not paid for in advance, to make up for those who pay nothing, or pay so reluctantly that it costs more than it is worth to get it, we have spoken otherwhere, and we have pointed out the only remedy. To be always paying for delinquents, when you take a periodical, to do this involuntarily, with no chance to show your generosity, to do it, perhaps, without knowing that you do it, is not so pleasant. We advise, therefore, to apply the only remedy, and escape from it altogether, viz.: if you want to do a generous thing in the way of paying for others, to do it voluntarily and have the credit of it.

There is a way in which you can accomplish this;—Give our current volume, or a year's subscription, beginning when you please, to some friend, who cannot well afford to pay for it, and who you believe would be stimulated to a higher style of cultivation by such a journal. By adopting the suggestions in our business notices, you would save half enough on your own subscription to accomplish the object. The price for the journal, ordered for such an object, will be two dollars. Suppose you should think of this about New Year's.

There are other subjects, grave and gay, fitted to the season, on which we would like to hold a long talk with our readers. But our pen-driving associate, or our more pen-driving self, as we fear it will turn out, has been too busy with these pages; the printer cries "Hold up;" and we will end as we began, by tendering to our readers our hearty congratulations. May goodness, intelligence, wealth—we name them in the order of their worth—be theirs.

Mechanical.

THE FIRST AMERICAN SHOVEL, AND ITS CONSEQUENCES.

We have no sympathy with that feeling which prompts one to be ever prating about "the dignity of human labor," nor do we see any occasion for such efforts. We are content, when we recur to such a topic, with the simple suggestion, that cannot be disputed, that, whether it be desirable or honorable, or otherwise, labor is man's destiny, part and parcel of his being, and he who does not labor shuts himself out from the direct enjoyment of many and rich rewards, which belong of right, and are given to every one who properly fulfills his destiny. We therefore prefer to follow out other trains of thought; we like, rather, to hold up to view the practical, real, living, acting, influential, creative—one who will not be a drone, who aims not at the highest he can imagine, or even the highest he can see, but the highest he can attain. This is the true man, the real benefactor of his race. We would represent such a man, in his every-day life, reaping, as he goes, the certain, constant, permanent reward of intelligent labor. Even these every-day scenes, we would strip of all merely adventitious, accidental attractions, and then our picture is more honorable to the man, and he is more useful to the world, and richer in his gains, than any pretentious and boastful but indolent and inefficient member of his race, who ignores the plain and practical duties of life, and has no ambition *to achieve.*

We once heard a learned Professor treat of "the poetry of mathematics;" and if his definitions were correct, our topic, even thus limited, is poetic, and is so demonstrated in the paragraphs which follow. Like Schiller, who, in elegant verse, celebrated the casting of a bell, so, another equally gifted mind, selecting our present topic for his theme, may open up vistas of brilliant thought and joyous fancies. We adhere to our topic, *the production of the first shovel.*

The iron for our humble tool is in the mountains, intermingled and combined with various other matters, neither in form nor substance what we need, covered up and scarcely accessible, and utterly beyond the power of ordinary men even to discover it. There let it lie, says Indolence. There let it lie, says Hesitation; and Doubt thinks he is right. There let it lie, says the drowsy son of a rich father, who earned what the son is spending. There let it lie, says proud Conservatism, who knows nothing of progress, and least of all, progress among the masses. Not so, says intelligent Industry; we will dig up these hidden treasures and open a mine of wealth more precious than a mine of gold; silver cannot buy it. But how shall it be done? Where is the man with skill to find, and enterprise to develop, these immense resources? Go to our Universities, but you will find the pupils unlearned in these sciences, and no one answers to your call. Even "the faculty" have not acquired this art. Then we must go abroad, where such operations are familiar to hundreds, and there we can find a man to pronounce this *sesame.* But he must bring his own pickaxe, and drill, and sledge, his spade and his crucible. We have none of our own production. We must borrow or buy every thing we need. So we import our engineer, and he brings his tools with him. He digs into the mountain, and ere long, huge piles

of ore are waiting to yield up their treasures. But there is no furnace. How shall we manage this matter? Call in a troop of masons, summon a score of brickmakers, and of stone-cutters, and furnish them all with implements. Meanwhile, get car-builders and blacksmiths, and provide the means for conveying the ore to the furnace. Very speedily the tall pile looks out over the wide horizon, and proclaims a glorious success. Then the services of another set of mechanics are needed, to build various conveniences, for which lumbermen have provided the material, and by the use of foreign nails and foreign hammers, this task is soon completed. The makers of wooden-ware, glass-blowers, etc., by the help of some half dozen other kinds of craftsmen, provide the buckets and tubs, the tumblers, etc.; potters furnish the earthen-ware, for the accommodation of the workmen; chair-makers, cabinet-makers, tailors, hatters, etc., each furnish their several products for the convenience of all, and each helps the other.

But who shall feed them? They are all hungry, and have no food. They send to the neighboring farmers to buy meats and vegetables, and a temporary supply is obtained, for which they pay a liberal price, double and quadruple what had previously been quite satisfactory. But these supplies are soon exhausted. The farmer must clear his forests, and enrich his soils, and raise larger crops; and to do this he, in turn, needs more help, and calls in men from abroad. Before, the farmer only fed his own family. Now he feeds many more. His market is more than doubled, and his prices are increased four fold. Then he needs more tools, more ploughs, more hoes, more scythes, more of every implement; and this again requires more mechanics, and he must constantly add to his annual crops, and as he increases his daily labor, adds, in a still greater ratio, to his constant returns.

Meanwhile these mechanic arts are in successful progress, and very soon the shout echoes along the valleys, that the work is done. Art has a home among our own mountains. We can make, we have made, our first shovel.

And, lo! a village is in progress. Every industrial art is called into requisition, and all are employed, and all prosper. Population increases; the village is extended; the lands rise in value a hundred fold; agriculture is profitable, new and improved modes of farming are introduced. Industry is king, and his reign is a complete triumph.

A genius like Schiller's might well immortalize itself by the Song of the Shovel, as it has already by the Song of the Bell, which not only pleases by its poetic beauties, but is made doubly effective in the melodies and harmonies of rich music.

It is the energy which finds scope in such scenes, and only this, which gives vitality to a nation. Literature and refinement, unsustained, do not perpetuate themselves. It is hard for them to maintain their high demands on successive generations, in the midst of indolence and inactivity, and under the pressure of diminishing resources, and perhaps in the face of impending poverty. Under such circumstances, elegant retirement soon becomes changed into imbecile idleness, and the enjoyment of literary leisure is degraded into lazy, besotted ignorance.

In ancient mythology, we are told that Vulcan, being enraged with his mother, Hero, made and presented to her a throne of gold, upon which she was no sooner seated than she found herself unable to move. So it is with the

votary of dignified idleness. He is thoroughly enslaved, and loses not only the power but also the will to be free. He even glories in his condition, and none the less when he sees his dependence wasting away, and the community around him either getting the advantages which he has lost, or, together with him, sinking into the like imbecility and decay. The realms of Pluto were so gloomy that all the goddesses refused to marry him. So should it be with those communities where useful labor is held in dishonor, and Idleness is enthroned as king.

But in the realms we have been describing, as already stated, Industry is king. The Romans, in their works of art, represented the Genii as winged beings, and this name is derived from a word signifying *producers*—one of the instances which so abound in this fabulous system, in which the greatest truths are taught under a fictitious form.

Now, if the reader would see all the pleasant parts of this picture, so imperfectly drawn, developed in real life, proving themselves *living truths*, and set off with much more, equally pleasing, let him read the following abstract of a description which we find in the Boston *Traveller*, in reference to the commencement and prosecution of just such an enteprise. P.

THE AMERICAN SHOVEL.—D. AMES.

In the last century, most of the shovels in use, in the Northern States, were of wood—shaped out by the farmers, and then "shod" or edged with iron or steel, by the blacksmiths. About fourscore years ago, in Bridewater, we think, Mr. John Ames began the manufacture of shovels. He used American iron, and the bars were brought from neighboring forges by his own son, carrying the load before him on horseback—say two bars at a time. The rolling, shearing, hammering, etc., was done at his shop; the handles were made by cabinet-makers. At this period a Mr. Dyke was also engaged, in North Bridgewater, in the same business. During the Revolution, there was a great demand for guns, and Mr. Ames contracted to furnish these to the Continental army. After the struggle was over, he turned his ingenuity to the fabrication of knives and forks, and scythes, then much needed.

It was about 1800 that the youngest son of John, Mr. Oliver Ames—who, though more than threescore and ten, is still hale and active, and at the head of the firm we shall refer to presently—re-commenced the making of shovels at Bridgewater. He changed his location several times, having his shop in Bridgewater, Plymouth, and Easton, respectively, until 1814, when he settled permanently in the latter town. From 1814 to 1820 he turned out from 8 to 10 dozen per diem. In 1821–22 there were but two shops. A want of water led to an increase of the number; and privileges were obtained, and a shop built in Braintree in 1822, in West Bridgewater in 1829, and in Canton in 1848, carrying nine trip-hammers, and five grindstones, which still belong to the concern, being tributary colonies to the central establishment. In 1845, Mr. Ames took two of his sons, Oliver and Oakes, into partnership. Several of the third generation are employed as clerks and overseers; so that the manufactory is a sort of "family affair," and is managed with consummate system and skill, and is made, indirectly at least, to produce something besides material wealth.

The village of North Easton, in population and prosperity by far the largess portion of the town to which it belongs, is in Bristol county, about 22 milet from Boston. There is nothing specially attractive about the place, and the editor of "Harper's Gazetteer of the World" appears to have been ignorant of its chief glory, as it has not a syllable about the shovel factory. As a matter of fact here is a thriving community, of some 2000 souls, quite homogeneous, comfortable and independent—made what it is, with its cottages, churches, schools, etc., almost entirely by the wise enterprise, and mechanical skill and business talent, of a single family.

The main building of the factory is two stories high, 525 feet in length, with an L 95 feet and an engine room 40 feet, built of stone obtained hard by. Another stone edifice has been recently erected, where ten trip-hammers are put in operation by a steam engine of 250 horse power. Besides these main structures, there are six hammer shops, (all the hammer shops give 24 trip-hammers,) one griding shop with five stones, and one shearing shop.

It requires 24 different processes to complete a first quality cast steel shovel. All these processes are performed on the premises, except the making of the handles; these, of white ash, are made in Pennsylvania and Maine—the wood from the latter State being preferable for its closer grain. The advantage derived from machinery and the division of labor may be judged of, from the fact, that a shovel is finished in about one hour and a quarter; and, 300 men being employed, shovels are produced at the rate of one in every *fifteen seconds*, or 200 dozen a day; that is, 2400 shovels in ten hours—720,000 in a year!

There are seven different qualities of shovels—among which is the long-handled, pointed-blade shovel, preferred by Californians. The stock used in one year is as follows:

Best Swedish Iron	900 tons.
Cast Steel	400 "
Fuel	2000 "
Grind Stones	85 "
Emery	18 "
Vitriol	5 "
Glue	3 "

The amount of sales, the last year, was $600,000. The average price of shovels per dozen, is about $10.

At this establishment are manufactured one third of all the shovels (six hundred dozen a day) made in the United States. So it is the banner shop, followed at a considerable distance by about thirty other shops, the principal of which are at Philadelphia and at Pittsburgh, Pa.

We look upon the establishment of the Messrs. Ames as something better and higher than a successful business operation, and as having other relations beside its relation to the business world. It illustrates the fact, that the right and enlightened pursuit of individual interest may be truly philanthropic in direct and indirect results, and it symbolizes the progress of civilization. There is that about North Easton which indicates the presence of a positive regard for the welfare of the little community, and a positive public spirit. But without adverting to this, the place is an evidence how the interests of employers and employés are identical, and how all prosper together. At a rough guess we may say that fifteen hundred persons are dependent upon "The Shop"—and "The Shop" takes care of them all. Some of the operatives have been steadily at work for years, and earned a competence. One man, if he lives till next November, will have been engaged in shovel-making, under Mr. Ames, for half a century; and he has, naturally enough, identified himself with the "concern," and feels that his connection with it is something to be proud of. Should his life be spared till he rounds off the fiftieth year of his service, he ought to have a jubilee and a testimonial!

But besides the benevolent working of this free-labor institution—where every man who respects himself may preserve his independence and put the wages of his own toil into his own pocket—it tells also of social advancement. You may despise a single shovel, but when you reflect that more than *two millions* of shovels are demanded annually, from the makers of the United States alone, the shovel, we submit, becomes amazingly significant.

GAS LIME.—The gas lime must not be applied in a fresh state to any crop, but should be mixed with two or three times its weight of earthy or vegetable mold, and then turned over repeatedly for at least twelve months. It will then be fit for applying to the land. It will be most appropriate for clover or grass lands. From fifty to sixty bushels of the gas lime, prepared as before mentioned, may be used per acre in the autumn or spring.—*Mark Lane Express.*

AMERICAN MECHANICS AND MANUFACTURES.

A new Iron Steam Ship of War.—The use of iron for civil and naval architecture, is becoming very common, and unless the bright hopes of those in this interest are dimmed by some unlooked-for failure, which hardly seems possible, there will be opened for such uses an immense iron market, which may have a material bearing upon its market value. Few stores are now built in this city without an iron front, at least of one story; and often such structures are continued of iron to their very tops. In naval service, we have made less progress, but the work is commenced, and not only contemplates small boats, but large ships. Many of our readers have heard of the "strictly private" structure that is to become a ship of war, or a naval battery, or something of that kind, in Hoboken, on which the General Government have already expended, it is said, $250,000.

Ship at East-Boston.—Our Boston friends are even more advanced in this kind of enterprise than we are in this city. At East-Boston, an iron ship is in process of construction, and nearly completed, intended for the Viceroy of Egypt. The following description is given of her in one of our exchanges. She is said to be 215 feet long, 87 wide, and 21 feet deep, with long sharp ends, slightly concave water lines, and a semi-circular stern. The iron-work of her outside is almost complete to the rail, and varies from three-fourths to three-eighths of an inch in thickness, but inside the wood-work is all open. Her frames are of iron, in the shape of a right angle, with a base of three inches, to which the outside plates are riveted, and a perpendicular of six inches. Between the perpendiculars or projections of the iron frames, she is filled in with hacmatack frames, from three feet below the lower deck to the rail. These frames are secured to the iron frames, and are also bound in their places by 12 iron belts two and a half inches wide by five-eighths of an inch thick, and these are also riveted to the iron-work of the hull. Over the wooden framing she is being ceiled with hard pine, which is fastened with screw and blunt bolts. In the wake of the engine-room, the deck-beams and other fixtures are all of iron. The ends of her beams are clasped and fastened with iron, and lodge in iron pockets, which are bolted to the sides.

Her beams are only three feet apart, with ledges and carlins between every two; they are also secured with hanging knees, and her deck plank is laid edgeways and bolted. The hackmatack frames vary from twelve to eight and seven inches, and will not average more than half an inch apart, fore and aft. From the bilge, therefore, to the rail, she is, inside, more thoroughly built than any wooden ship of her size, notwithstanding she has the usual strength of an iron ship outside. This filling in makes her very solid, and must be proof against vibration when under steam. She has five water-tight bulkheads, and each compartment is so arranged, that it may be filled or pumped out at pleasure independently of the others. She has two flush decks, consequently her machinery is below the water line. Her armament, which we understand will be very heavy, will be on the upper deck, leaving the deck below for the accommodation of her officers and crew. She will have a single propeller, and two powerful engines, which have been built at the Atlantic Works, East-Boston.

This brief description shows that she has extraordinary strength, and her

model is said to be very beautiful. She will be rigged as a ship, and is the largest iron vessel ever built in this country. The order for this structure was given by the Viceroy under the conviction that he would secure in this country, a better model for speed, than he could in Europe.

General Increased Use of Iron.—Elsewhere the use of iron is extended far beyond the amount required but a few years since, so that one of the best judges of the quantity now annually manufactured, estimates this to be about 7,000,000 tons. Of this, Great Britain produces about 2,500,000 tons, and the United States 1,000,000 tons; Belgium, Russia, and France, come next in the list of producers, ranging from 975,000 tons manufactured by Belgium, to 650,000 tons, the product of France.

The new method discovered in England, and also in this country, by which the expense of this manufacture will be very essentially diminished, will greatly increase this demand, so that under ordinary circumstances the market will not fail to be quick and the profits of the mines be greatly enhanced.

Evils of the Credit System.—The value of quick sales and cash payments, though perfectly appreciated by those who directly suffer from our present usages, are not understood by the public, and we may add a thought which will not be entirely out of place in this connection. In England, the manufacturer of cotton, woolen, and other goods, commences with the raw material, and performs all the labor upon it, paying cash, and then sells, realizing cash, all within the space of a few months. In this country, the manufacturer buys for cash, perhaps, and pays workmen cash, weekly or monthly—at Lowell, all such payments are made monthly. The goods are then sent to the broker or agent, and are sold on a credit of six, nine, or even twelve months, so that ordinarily, perhaps, a year intervenes between payment for its cost by the manufacturer, and the time when he receives payment from its sale. This difference is by no means a small affair, for it requires a much larger capital with which to do business on this long credit, than is required for the same amount of the same business in England; and this is one of the elements which, in the final result, give so great an advantage to the English manufacturer over those of this country. The credit system, so extensively prevalent in the United States, is an incubus which would ruin any people of only ordinary industry and efficiency.

Importation of Iron.—Our census returns show an enormous increase in the use of iron in this country, as may be seen by the following statement of the amount imported and exported in different years:

	1840.	1856.
Foreign Importation, - - - - -	$6,750,099	$22,980,728
" Exported, - - - - - -	156,115	1,565,523
Domestic Exported, - - - - -	1,104,455	3,753,472

Influence of Emigration on Agriculture.—An English journal undertakes to give us the trades and callings of the multitude of emigrants which come to this country. These figures may approximate to the truth, although it will undoubtedly be found that the emigrant does not always pursue the same trade here as he did at home. A very large proportion of those who there cultivated a small *patch*, which formed their entire farm, are here engaged with shovels and pickaxes, on our railroads and other large enterprises. But to a certain extent,

the calculation is of some value, and may go far, perhaps, to relieve the mind of some timid farmer who fears that he is to encounter too many rivals in the work of production. For the only hope of the land-owner is to be able to feed a multitude of mechanics. But for the table of trades: In 1854, of 134,789 emigrants, 3984 were bricklayers, masons, plasterers, and slaters; 1574 were blacksmiths; 5185 were carpenters and joiners; 4112 were miners and quarrymen; 21,347 were mechanics of some kind, including those just specified. It is estimated that, on the average, about one sixth of the whole number are mechanics. A very large portion of the remainder must be employed in other labor than that of the farm.

Projectile Forces.—Certain careful experiments have recently been made at the arsenal in Washington, by some of the scientific gentlemen connected with the United States army, in relation to the projectile force of gunpowder, with the following results: With a ball weighing about 6½ lbs., and a charge of 1½ lbs. of Dupont's cannon powder, the greatest pressure at any instant on the interior of the gun at one inch from the breech, varied from 19,000 to 21,000 pounds per square inch. At one foot from the breech the greatest pressure was only about 8000 pounds; at two feet, about the same; at three feet, about 6000; and at four feet, about 5900 pounds. The pressure of a small quantity of Hazard's rifle powder, fired in a cavity from which there was absolutely no escape, was not sufficient to burst the box, the strength of which was estimated sufficient to sustain an internal pressure of about 93,000 lbs. per square inch.

Artificial Ice.—We see the statement is made by some of our exchanges, that some ingenious person has invented a plan for producing very large quantities of artificial ice, even in the temperature of summer. That this is possible, we have no doubt. That it is economical, we can not yet believe. The cost of the machinery and the materials required for producing such a depression of the temperature as to bring a large mass of water to the freezing point, must greatly exceed the cost of ice at present market prices. But perhaps, we should add that a gentleman in Cleveland, Ohio, claims to effect this at a cost of five dollars a ton.

Value of Iron Filings.—Old scraps and filings of iron have been considered of very little or no value, perhaps not more than five dollars a ton. But recently ingenious men have discovered modes by which these may all be turned to account. One plan, devised by Mr. A. Pevey, of Lowell, is this: A cheap hollow casting is provided, which is filled with these small pieces, and then the whole are placed on the furnace and melted together. Mr. E. Lyon, of Boston, has another plan of his own contrivance. These small bits are placed in a compact mass near the center of each charge, so that the draft will pass freely through the coal on all sides of it. In this way the tendency to choke and clog the chimney, endangering an explosion, or at least injuring the success of the process, is in a great measure, if not entirely, prevented.

New Instrument for Surveying.—An ingenious instrument has been constructed lately, of great utility in the art of surveying. It comprises two telescopes, attached to the same table at certain distances from each other, one firmly fixed to it, and the other movable over it upon a pivot, on a line at right angles to the line of the former, so that both may be made to bear upon the

same point. The latter telescope has an index attached to it, moving over a graduated scale of distances marked upon the table, which thus indicates the distance of the point or angle formed by the meeting of the lines of the two telescopes. Hence the principle on which it is constructed is the familiar one of the right angle triangle, and avoids the necessity of logarithmic or other computations. It is easily made by an ordinary mechanic, though the graduation of the table would require considerable mathematical skill.

Epidemic Among Fish.—The rivers of Michigan have become incapable of sustaining the lives of fish, and multitudes are said to be thrown dead upon the banks. The cause is entirely unknown.

Poisoned Cheese.—An instance has occurred in which persons have been poisoned from eating cheese, and it was found that the anotta with which it was colored, was itself adulterated by vermilion, which was adulterated with red lead. The adulteration of an adulteration did the mischief.

Allen & Osmond's Improved Patent Shuttle Loom.—This valuable invention was patented by these gentlemen in April last, (1856,) and seems to be an important acquisition in the department of labor for which it is designed. It weaves checks, plaids, ginghams, handkerchiefs, shawls, etc., which, both in this country and in Europe, have been woven by hand; for, while four-shuttle looms have been long known, their use has been limited to certain patterns. This loom can weave by power, all patterns, whether of large size, as handkerchiefs, shawls, etc., or smaller ones, including "all kinds of cross-bar fancy goods, whatever the device or pattern." The lift and drop motion is so constructed that it will skip from shuttle to shuttle, as may be required, and no shuttle can be made to operate but the right one. The pattern may be altered "in a few seconds." It is not liable to get easily out of order, and costs about as much as any other four-shuttle loom. It is in operation in the Franklin Factory, Wilmington, Del., where the patentees reside, of whom further information can be obtained.

P.

AMERICAN INSTITUTE.

Among the various productions of our enterprising mechanics, manufacturers, and inventors, lately on exhibition in the Crystal Palace, which are not yet noticed, we think the following may be of interest, each to a portion of our readers. P.

Scales of the Vergennes (Vt.) Scale Company.—The accuracy of the results as tested by numerous experiments, with these scales, gives them a very high rank in all the varieties of form on which they have been constructed.

Marble Headstones and Daguerreotype Likenesses.—This is an original idea, so far as we know, for perpetuating the appearance, as well as the character, as heretofore, of a deceased friend. Whether any monopoly of this kind can be secured by patent, is another question, not for us to decide. We do not know whether any is claimed.

Night Alarm and Light.—James Wood, of this city, exhibited a very ingenious combination of an alarm and a wax-match which becomes ignited by the machinery. The burglar finds himself not only making noise enough to awaken a whole family, but also under the light of a bright candle.

Leather Frames and Ornamental Pieces.—The use of leather for various kinds of ornaments, either in the form of small scraps or larger pieces, is getting to be quite general, and is worthy of attention. It is both cheap and elegant. We will endeavor to give hereafter a description of the mode of using it. This work is a very pretty amusement for young ladies in their leisure hours.

Scroll-Sawing.—We may perhaps have referred the reader, heretofore, to arrangements for scroll-sawing. We believe, in our account of the exhibition in Boston last year, we referred to such a machine. We find it in this exhibition, and again admire the perfection and fineness of its work. The most complicated curves, of a very small radius, are cut out with great exactness and with great rapidity. It cannot fail to be valuable in the shop of every maker of fancy work of such description. It consists of a proper adaptation by machinery, of a very thin and very narrow saw, so that, like a wire, it may be urged through the wood equally well in any desired direction.

Sheet Brass.—The most elegant specimens of sheet brass we ever examined, were exhibited by Messrs. Benedict & Burnham, of Waterbury, Conn. Other forms of brass-ware, of similar quality and workmanship, were also on exhibition.

Musquito Canopies.—We refer to these variously fashioned, but very important safeguards against those noxious and obnoxious insects, merely to describe the different forms in which they may be arranged by our housewives in their own families. These modes are as follows: One sustains the canopy by a rectangular frame resting upon the posts of a high-post bedstead. Another rests it upon four slim rods, fastened by a wire let into the tops of low posts, and into one end of each rod, while the other ends of the rods meet and are fastened together at an elevated point over the center of the bedstead, higher than the bedposts. In a third, the canopy is suspended from a single rod, the length of which equals the width of the bedstead, and hanging down on all sides in loose folds, the rod being suspended from a hook in the ceiling, over which a cord is thrown, fastened to each end of the rod. In a fourth, the entire canopy is swung through a ring suspended over the bed, and hangs in loose folds. In a fifth, a hoop of any size that may be preferred, covered with cambric, as a drum-head, is hung over the bed, and the canopy, cut in convenient lengths and sewed together, is "gathered" or plaited and fastened round the hoop, hanging in loose folds in all directions. In the points of economy and convenience, we give the preference to this over any other. The fixtures about the hoop may be made as ornamental as one's taste requires. The larger the hoop, the more air, of course, will be inclosed within the canopy. One of two or three feet in diameter answers a very good purpose. In some of these different modes of suspension, the canopy may be drawn tight, or hang in loose folds, as each person prefers. Two "short" pieces of netting are quite sufficient for a canopy for a double bed. We refer to such nets as are manufactured in this city.

Hoop-Sawing Machine, by Mr. Strange, of Taunton, is a capital arrangement for rapid and good workmanship. Another, by Mr. Marble, of Paris, Me., is designed for the same service. A Company in Fitchburg, Mass., also exhibited an excellent machine. We cannot judge very well, how these would compare

with each other, in such woods as would be submitted to them in a cooper's shop.

Machine for Planing and Turning Barrel-Heads, by Mr. Robinson of Keesville, operated admirably, and seems all that can be desired.

Prince's Protean Pen.—We refer again to this valuable invention, only to remark that the parties in interest have devised new patterns of it, of different styles, to suit different tastes and different *hands*, and can scarcely fail to suit any one who needs any accommodation of this kind. We always use one of these pens, and should not feel *at home* without them.

Mechanical Paradox.—This is one of the marvels of the age, discovered by scientific men, and, like many others of the phenomena connected with revolving bodies, is demonstrated as clearly as the sun at——midnight. In other words, the fact is abundantly proved, *by eye-sight*, giving opportunity for very learned and strange-looking mathematical processes, sometimes called demonstrations. This may be set down alongside of the pendulum problem, which has set into motion so many pens, and used up paper, ink, and intellect, without throwing much light upon the matter. It furnishes, however, a very beautiful scientific toy for persons of all ages, from ten years upwards. They are for sale in this city, at about $3 00 each.

Patent Gas Regulators.—We are fully prepared to commend the use of one or more kinds of gas regulators, both as a means of improving the flame of gas, and of saving in the amount of gas consumed, while, as in the case just mentioned, we cannot give such a reason for it as satisfies ourself, or as would satisfy others. Of the fact we have no doubt, and believe that the cost of this addition to every gas meter, which is about ten dollars, but varying with the number of lights to be regulated, would be saved in a few months. It can be attached to any meter.

Horse-Shoe without Nails.—We hold this to be one of the most hazardous humbugs we have recently examined, though we may possibly be very much mistaken.

Grooving Plane.—Mr. Robinson, of Mattewan, exhibited some fine grooving planes, suited to various patterns, which are handled with great convenience, and produce beautiful work. P.

Recent English Patents.

SELECTED AND PREPARED BY M. P. P.

An Improvement in Apparatus used for giving Notice when the Water in a Steam Boiler is too low. By William Oliver Johnson, Acklington, Northumberland.

This invention consists in a peculiar combination of a hollow float with a steam-whistle. For this purpose a hollow float is attached to a stem or rod, which passes through a guide, and has a stop to prevent the float falling too far. The upper end of the rod or stem is attached by a pin-joint to a plug with a stem, which enters the tube of a steam-whistle, and is guided

thereby. When the water in the boiler is at a proper height, the float presses the plug into its seat, and no steam escapes through the whistle; but when the water falls too low, the plug descends with the float, and the passage to the whistle is opened; the steam then flows through, and sounds the whistle.

IMPROVEMENTS IN MACHINERY FOR THE MANUFACTURE OF LOOPED OR KNITTED FABRICS. By JOHN THORNTON, ALBERT THORNTON, WILLIAM THORNTON, and HENRY THORNTON, all of Nottingham.

This invention consists in a peculiar combination of mechanical parts into a machine for manufacturing looped or knitted fabrics; for which purpose two cylinders are used, each grooved on its circumference with as many grooves as there are needles or looping instruments. These cylinders are caused to revolve simultaneously end to end, but at a short distance apart, in such manner as to admit of the needles or looping instruments being slid from the grooves of one cylinder into the grooves of the other cylinder. In these grooves are slid needles or hooked instruments, suitable for making looped fabrics, each having a beard or hook at each end, so that the work is alternately made at the two ends of the needles or looping instruments. The needles or looping instruments are slid to and fro, from cylinder to cylinder, by means of fixed inclines or guides; the work being forced over the heads of the needles or looping instruments when such instruments are moved into the grooves.

By this arrangement the needles or instruments traverse their whole length first into one cylinder and then into the other, and the work is formed at each end of the needles or other suitable loop-forming instruments alternately. The thread-layers and the sinking and pressing wheels are of the ordinary construction. The work is conducted and drawn through one of the cylinders by having a cord and weight attached thereto, or otherwise, and passed over a pulley, as is well understood.

AN IMPROVEMENT IN THE ROLLING OF IRON FOR THE MAKING OF SHIPS' KNEES. By JOSEPH BETTELEY, Liverpool.

Heretofore, when rolling iron for the making of ships' knees, they have in some cases been rolled of a wedge-like form to make each of the limbs of a knee of more substance at the bend than at the ends of the limbs; thus bringing the strongest part at the bend; and in some cases the wedge-form has been produced by two straight lines or surfaces inclined to each other.

This invention consists in forming the grooves or surfaces of the rolls used in rolling knee-iron, so as to produce one of the surfaces of each limb with a curved line or surface; at the same time making such curved line incline to the other surface of the limb, in order to bring the greatest substance of the iron to and near the bend, as heretofore, when making each limb of a ship's knee wedge-form or tapering; and also for forming the groove or surface of the rolls of a shape so as to roll iron tapered on the sides instead of top and bottom, as heretofore.

AN IMPROVED MODE OF MANUFACTURING RODS, SHAFTS, AND TUBES OF IRON AND STEEL. By ALFRED VINCENT NEWTON, Chancery Lane.

The object of this invention is to manufacture rods, shafts, and tubes of iron and steel, possessing great tenacity of fiber, and capable of effectually resisting sudden or continuous strain, or a force of greater intensity than rods, shafts, and tubes of the same weight, but produced by the ordinary processes of manufacture, are able to resist.

In carrying out this invention, which is applicable chiefly to the manufacture of gun-barrels, the operator takes, by preference, a round bar of iron or steel, of suitable size and quality, and heats one end thereof red hot in a smith's forge or furnace; he then fixes one end of the bar, say the heated end, in a vice, and turns the cool part of the bar round on its axis. The heated part of the bar will then yield under this strain, and take a twisted form; the fibers of the metal

at the same time being laid in a helical direction, somewhat like the fibers of yarn. The metal, while red hot, is subjected to the operation of hammering, the blows of the hammer being delivered on the end of the bar; by which means the proximate edges or projections of the helical twist will be welded together, and solidity will be given to that part of the bar. The next thing is to re-heat the bar a little below the part just operated upon, and the like operation of twisting and hammering is repeated. When one half the length of the bar has been thus twisted and knocked up, the workman turns ends, and proceeds in like manner with the other half; or he may commence in the middle of the bar and work towards the ends, in which case the same effect (viz., the laying of the fibers of the iron around the axis of the bar) will take place.

The fibers of the iron, although they will necessarily be all twisted, will take variable amounts of twist, according to their situation in the bar; that is to say, those which lie in the middle of the bar will have considerably less twist than those which lie at the periphery; and it is this difference of twist, or non-parellelism of the fibers, which renders this new manufacture specially applicable to fire-arms; for in boring a round bar made according to this invention, in order to convert it into a gun-barrel, it will be found that the direction of the fiber of the metal forming the inner periphery of the barrel will be comparatively but a slight divergence from the axis of the barrel; the shot will therefore act upon the barrel more nearly in the direction of the fiber of the metal than in twisted metal barrels of the ordinary construction, and consequently with less wear or injury to the gun.

IMPROVEMENTS IN TREATING VULCANIZED INDIA-RUBBER OR GUTTA-PERCHA. By NATHANIEL SHATTSWELL DODGE, St. Paul's Church-yard.

This invention relates to a peculiar mode of treating vulcanized India-rubber, whether soft or hard, or vulcanized gutta-percha, for the purpose of rendering scraps or waste pieces of such vulcanized material—such, for example, as old shoes, railway-buffers, &c.—fit to be worked up into useful articles or fabrics without requiring to be re-vulcanized. For this purpose the material to be treated, if existing in large pieces, is reduced into smaller ones, and is then placed in a vessel capable of being closed air-tight. To this material is now added pure alcohol and bi-sulphuret of carbon, in the proportion of a quarter of a pound weight of the former, and ten pounds weight of the latter, to one hundred pounds weight of the material; the alcohol and the bi-sulphuret of carbon being previously mixed together, and then poured over the material to be treated. The vessel containing the ingredients is then closed air-tight, and allowed to remain so for about two hours, more or less; at the expiration of which time the cover may be removed, when the whole will be found to be in a soft, plastic, or gummy state, and ready to be ground in the ordinary way of grinding such gums, for the purpose of manufacturing it into various useful or ornamental articles, without repeating the process of vulcanizing. By adding a larger proportion of the alcohol and bi-sulphuret of carbon, the gums may be reduced to a liquid state.

IMPROVEMENTS IN THE CONSTRUCTION OF ROOFING AND OTHER TILES. By JAMES POCKSON, Penton street, Walworth.

This invention consists in forming tiles in two distinct parts; one called the upper tile, the other, the under tile. The under tiles are constructed so that when cut in cross section they present the form of a V. The upper tile is made in the same way, but is exactly the reverse when cut in cross section—presenting the form ∧. When in use, the upper tile is so arranged as to lie over and cover the junction of the adjacent sides of two under tiles; they are also so made as to have a projecting band on their under surface, to act as a fastening to attach or hang them to the tile, lath, or other substance, upon which they have to lie. The under surface of the top tile is cut into and removed for a large space on either side of the center from bottom to top, with the exception of a small band at each end: the object of this being both to

lighten the weight of the tiles, and to prevent the water from being drawn up between the under and upper tiles. The tiles may be formed of any plastic materials now used, or in glass or metals, and the mode of making them may be either by molds or by machines, as now practiced for ordinary tiles.

THE APPLICATION OF A NEW MATERIAL OR MIXTURE FOR DRESSING OR SIZING TEXTILE FABRICS OR MATERIALS. By JOHN ERSKINE, Glasgow.

This invention relates to the application and use, in dressing or sizing textile fabrics or materials, of a new dressing material or sizing mixture. This sizing material is composed by mixing together potato flour and wheaten flour, or potato flour and rice flour. The proportions which the patentee prefers, are half potato flour and half wheaten or rice flour. In preparing the mixture for the dresser or sizer, it is done in the usual way, by using a certain proportion of the material to a certain quantity of water, which is then boiled. He prefers to use one pound weight of the mixture to one imperial gallon of water, and boils the same for about twenty minutes; but he has found this mixture to improve by being well boiled, and therefore consumers cannot go wrong although they boil it during as much as three hours. After boiling, the mixture is run into tubs, such tubs being, by preference, of a shallow kind. This mixture can be used either entirely by itself, or in any proportion with other sizing materials, such, for instance, as sago flour; and by means of it the required dressing effect is produced at a more economical cost than by the means hitherto adopted.

AN IMPROVED METHOD OF PRODUCING FIGURED OR ORNAMENTAL SURFACES ON GLASS. By GEORGE REES, Clerkenwell.

This invention consists in an improved method of producing figured or ornamental surfaces on glass; and for this purpose a sheet of finished glass, either white or colored, of the dimensions required, is employed, which is rendered plastic by heat, and pressed between a pair of metal dies, engraved with the design or pattern which is to be given to the glass. After impressing the pattern upon the glass, it is annealed, and is then fit for use in windows, or for ornamental purposes.

In applying this invention, a sheet of flat finished glass, either white or colored, of the dimensions required, is made plastic by heating it in a reverberatory furnace. It is then pressed between a pair of metal dies or rollers, engraved with the design, pattern or inscription which is to be given to the glass. The dies or rollers may have the pattern raised in the one and sunk in the other; or one of them may be plain, according to the character of the ornamental surface that is to be produced. After impressing the pattern upon the glass, it is annealed in the ordinary manner, when it is fit for use in windows, or for decorative purposes.

Ornamental surfaces of glass, produced as before described, and hollow on their under side, may be ornamented by gilding, silvering, enameling, painting, staining, or otherwise, so as to produce any determined artistic effect. Another description of figured or ornamental surface may be produced by pressing the glass between dies or rollers, so as to leave the required pattern or inscription in slight relief. After the glass has been annealed, the raised pattern may be removed by grinding, when the pattern or inscription will appear dull upon a bright ground; or flashed glass may be thus treated, that is, white glass, coated or covered on one side with a colored glass. In this case the pattern will appear white upon a colored ground, or *vice versa*.

PROCESS FOR RESTORING METALLIC SPOILED PENS. By PROSPER PIMONT, Rouen, France.

The object of this invention is to restore to their original state of flexibility, hardness, and efficiency, steel or other metallic pens which have been thrown aside and spoiled, by the use of bad ink, long use, or neglect. To accomplish this purpose, the spoiled metallic pens are exposed in a suitable vessel to the

heat of a furnace, or to flame from any source, and raised to a red heat, or to any temperature discovered by experience to be sufficient. The pens are then allowed to cool, and afterwards cleaned from dirt or smoke which may adhere to them. This restoring operation, if not sufficient, is repeated until the desired object is obtained. By this simple but efficacious process, the pens, hitherto deemed spoiled, and therefore useless, are restored to their original state, as far as regards utility, and may be again used for the purpose for which they are designed

Junior Editor's Table.

THE issue of another number of our journal presents to us another invitation to a familiar chat with our readers. And another month brings us to the verge of a new year. Under these circumstances, no service that we can perform, having our readers in view, will be more in accordance with our sympathies, than to say to each one—a happy new year. In this, we utter a wish, a hope, and a disposition to help in obtaining a boon so desirable. But wishes are often indefinite, and are uttered without any reference to proprieties or possibilities. We often wish for something, when the next moment reveals to us that the fulfillment of our wish would be ruinous either to us or to others. Hopes are perhaps less frequently indulged without some reflection and deliberation, as to probable consequences, and are therefore less frequently irrational or absurd. But we are sure that no man is injured by being truly happy. We are often merry when we have occasion to be sad, and we sometimes sigh when we are unconsciously but rapidly approaching the fruition of substantial joy. We may be happy while we are scarcely relieved from a process of severe moral discipline. But we are not writing a moral essay. We wish all our readers a TRULY HAPPY NEW YEAR.

The outer atmosphere, throughout the political horizon, within a few weeks, has been clearing up. Dark clouds have disappeared, contesting factions cease their wranglings. The successful rejoice with becoming moderation. Their opponents submit like honest citizens. "The country is safe." Now, if we may compare the small and the great, the private and the public, we may say that within our own sphere, which is large and grand in one view, comprehending every State and Territory in the Union, but very limited in another, a mere personal affair, there has also been of late an equally happy change. Some years ago we came into the service of the then proprietors of this journal, and found it in some respects prosperous and hopeful, but in others the reverse. The entire labor of sustaining it was soon devolved upon us, with but little "aid and comfort" from abroad, except that derived from the occasional contributions of our subscribers, whose more frequent commendations were both serviceable and encouraging, and more than we had a right to demand for any return we made, except in intention and in effort. The labor of three, all competent for their several departments, instead of one, was desirable and important, and could not be done to our own satisfaction by ourself, if ever so laborious. The kind commendations of those receiving our monthly issues, with scarcely a discordant tone, encouraged us to "hope on" and labor, till we could find one able and willing to give us efficient help. Such help is found; the greater half

of the burden is removed from our shoulder, and the change is very grateful to us. We might have changed our condition more speedily, but we would not act hastily, nor until we were sure that it was our best move. The move is made, and we cannot doubt that every intelligent reader is satisfied, and the six numbers of the present volume, and our daily records, bear testimony both of the importance of the change and of the readiness and complacency with which the public, *our* public, accepts the improvement, and pronounces it deserving of encouragement. These six months' trial, we are sure, must have satisfied all our readers on this point.

Now, having passed through this furnace, having provided such valuable and simple means for promoting the success of every form and variety of labor on the land, and having already the belief, well founded, as we trust, that all our readers are disposed to encourage us in this effort, may we, the *junior* Editor, invite each one to send the conductors of this journal a New Year's present in the form of new subscribers? A single postage stamp will bring us their own year's payment, and the subscription of their friend or friends, and though New Year's day may already have passed, the new year will be present; and every such exhibition, we can assure you, gives energy to our hands, and pungency to our thoughts, and vitality to our pages; and thus every dime finds its way back to the liberal subscriber, and doubly enriches both him and us. We abhor dunning. We are a little bashful in urging our claims, but may we not be both excused and justified, and even commended, for the suggestions we have made? Let our works commend us mutually to each other. P.

Miscellaneous.

THAT'S SO.—If men and women were willing to live within their income, disposed to begin life at the bottom of the ladder; obeying the primary impulses of their nature, and enter upon the cares, trials, and pleasures of the domestic circle, bind their hearts and twine their hopes around the family altar, they would be greatly the gainers. Here comes the difficulty. They must live, when they begin life, just as their parents are living now, or it may be in better style, than those who have been journeying together for thirty or forty years. This is decidedly wrong. Labor is wealth, and *two*, with honest industry, can manage to get along, until they can really afford to keep help, if necessary. In a former article we had occasion to refer to our first parents. It would be well if our modern fair ones were more willing to do as Eve did, when, with a new creation smiling around her, she and her husband began their housekeeping. Don't believe she thought the house would look *too common* without a velvet tapestry carpet on her parlor and sitting-room floors, nor do we believe she ever had a chambermaid or nurse to *run* after little Cain and Abel, at least when she *first went to housekeeping*, or that she ever went to the intelligence office, to see what it would cost per month to hire a first rate French cook or laundry-maid. There is little doubt she made Adam's trowsers (don't know what they called them, then) and hemmed his pocket handkerchiefs, fixed up his Sunday coat, and kept things generally nice and tidy in the house. While Eve was doing this, Adam was probably tending his flocks, or worked in the garden, fenced his potatoe patch, and attended to the churning, and other matters connected with the dairy. Thus they got along "right smartly" and economically, became quite aristocratic, had many children, lived to a good old age, and died among friends. This after all is the true way, to begin upon a small scale, and gradually rise from that point, rather than begin at the top and come down.

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

HARVEST HYMN.

AIR:—*Dundee.*

BY THE "PEASANT BARD."

O THOU, whose wisdom decks the sod,
And loads with fruit the bough!
We thank Thee that the FARMER'S GOD
Peculiarly art Thou.

Thine are the seasons as they roll;
Thy years, how dread they seem!
From age to age is thy control,
Deific and supreme.

When vernal skies and southern airs
Make green the sunny slope,
We turn the glebe with gleaming shares,
And cast the seed in hope.

When Autumn pours her solemn light
Upon the fading fields,
Our garners, filled to crowning height,
Show what Thy bounty yields.

Do Thou to us Thy grace impart,
Who on that bounty live;
The incense of a grateful heart
Is all that we can give.

GILL, MASS.

THE PEAR SECKEL.—About 89 years ago, when the Bishop was a lad, there was a well known sportsman and cattle dealer in Philadelphia, who was familiarly known as "Dutch Jacob." Every season, early in the Autumn, on returning from his shooting excursion, Dutch Jacob regaled his neighbors with pears of an unusually delicious flavor, the secret of whose place of growth, however, he would never satisfy their curiosity by divulging. At length the Holland Land Company, owning a considerable tract south of the city, disposed of it in parcels, and Dutch Jacob then secured the ground on which his favorite pear tree stood, a fine strip of land near the Delaware. Not long afterwards, it became the farm of Mr. Seckel, who introduced this remarkable fruit to public notice, and it received his name. Afterwards the property was added to the vast estate of the late Stephen Girard. The original tree still exists, (or did a few years ago,) vigorous and fruitful.—*Bost. Cult.*

KOHL-RABI.—Within the past few years the heads of this plant have been very considerably disseminated through the patent office and otherwise. It is a common European vegetable, belonging to the cabbage family—and its treatment in cultivation is quite like that plant, except that an equal space of ground will bear more of them. It is in fact a cabbage whose stem, just at the top, swells out into a sort of turnip-like affair, out of which the leaves grow. This reaches a size equal to a large round turnip, and when boiled is tender and much like a cabbage in flavor, but much more delicate, and without the strong smell of the cabbage, so disagreeable to many. It is well worthy of cultivation, like many other vegetables of which the Germans and French make great use, and which we rarely or never see here.—*Homestead.*

FEEDING MILCH COWS ON TOMATOES, ETC.—We tried an experiment in feeding milch cows that did so well with us that we will give the facts, and perhaps it maybe tested by others, and prove equally satisfactory to them.

In planting cotton, we left two rows together, in which there was no cotton seed dropped. About four feet apart in each row, we had the soil dug up with a grubbing hoe, about a foot deep, with about two spades of good manure well incorporated with the loose earth, and made into a flat, low hill, or bed. When a good season came, we planted a tomatoe plant (large round red) in each hill. They were worked with the cotten, and came very finely. Our squash patch was pretty large, and planted with a view to feeding our cows.

For two or three months we were able to have a half bushel or three pecks of tomatoes boiled with about the same quantity of squashes each day, and given to four cows. The results were remarkable. The quantity of butter exceeded the usual average for that number of cows; but what was the most striking result, and that which we had not anticipated, was the beautiful yellow color and the delicious flavor imparted to the butter by the tomatoes.—*So. Ca. Agriculturist.*

HIAWATHEAN.—We catch the following innocent little thing flying about the country in papers light and heavy. Very few of our readers will regard it as a dun; for, thanks to their promptness, the great majority of them owe us nothing. If a few others, here and there one, should need it for a higher purpose than to laugh about, why here it is:

"Should you ask me why this dunning,
Why these sad complaints and murmurs,
Murmurs loud about delinquents
Who have read the paper weekly,
Read what they have never paid for,
Read with pleasure and with profit,
Read of news both home and foreign,
Read the essays and the poems,
Full of wisdom and instruction;
Should you ask us why this dunning,
We should answer, we should tell you,

From the printer, from the mailer,
From the prompt old paper maker,
From the landlord, from the carrier,
From the man who taxes letters
With a *stamp* from Uncle Samuel—
Uncle *Sam* the rowdies call him—
From them all there comes a message,
Message kind, but firmly spoken,
'Please to pay us what you owe us.'

Sad it is to hear such message
When our funds are all exhausted,
When the last bank-note has left us,
When the gold coin all has vanished,
Gone to pay the paper maker,
Gone to pay the toiling printer,
Gone to pay the landlord tribute,
Gone to pay the active carrier,
Gone to pay the faithful master,
Gone to pay old Uncle Samuel—
Uncle *Sam* the rowdies call him—
Gone to pay the Western paper
Three-and-twenty hundred dollars!
Sad it is to turn our ledger,
Turn the leaves of this old ledger,
Turn and see what sums are due us,
Due for volumes long since ended,
Due for years of pleasant reading,
Due for years of toilsome labor,
Due despite our patient waiting,
Due despite our constant dunning,
Due in sums from two to twenty.

Would you lift a burden from us?
Would you drive a specter from you?
Would you taste a pleasant slumber?
Would you have a quiet conscience?
Would you read a paper *paid for?*
Send us money, send us money,
Send us money, send us money,
SEND THE MONEY THAT YOU OWE US!"

SIMPLICITY OF FAITH.—The late King of Sweden was greatly exercised upon the subject of faith some time previous to his death. A peasant being once on a particular occasion admitted to his presence, the King, knowing him to be a person of singular piety, asked him—"What he took to be the true nature of faith?" The peasant entered deeply into the subject, and much to the King's comfort and satisfaction. The King, at last, on his deathbed, had a return of his doubts and fears as to the safety of his soul, and still the same question was perpetually in his mouth to those about him, "What is real faith?" His attendants advised him to send for the Archbishop of Upsal, who, coming to the King's bedside, began in a learned and logical manner to enter into the scholastic definition of faith. The prelate's disquisition lasted an hour. When he had done, the King said, with much energy: "All this is ingenious, but not comfortable; it is not what I want. *Nothing after all but the farmer's faith will do for me.*"—*The Old Chest and its Treasures.*

☞ One person having asked another if he believed in the appearance of spirits, "No," was the reply, "but I believe in their *disappearance*, for I've missed a bottle of gin since last night."

BAD IF TRUE, THAT THE CALIFORNIANS DON'T GET MARRIED.—According to the Malthusian theory of population, this State will soon suffer for the want of families. It is in the families of our land, that we are to find the virtue, purity, and wealth of the State. The pecuniary condition of a State, its combined resources, and commercial facilities, do not constitute its principle wealth. The domestic fireside, the family circle, pure, intelligent and virtuous children, are of far more importance than ships, warehouses, rich lands, or dollars and cents. Together, all these constitute a growing and virtuous community. Apart, the sum of happiness is greatly diminished. The materials from which to rear the entire social fabric, are spread around us in ample profusion; but much like those intended for a splendid edifice, strewn in every direction, each to be prepared and placed in the proper position by the hand of the workman. There are many men and women here, who are not married, and yet they ought to be.—*Cal. Farmer.*

HOW THEY DO THINGS AT SALT LAKE.—Prest. Grant, in the midst of his missionary labors and farming improvements and operations, is enlarging his city residence, feeling that want of more dwelling room, so incident to those who observe the "peculiar institution."

"The Court House is receiving its dome-capped cupola; large loads of huge stones are being rolled on to the Temple Block, and workmen are busily engaged in cutting them; and numerous minor improvements are actively prosecuted, all tending to beautify and make commodious the habitations, grounds, and streets of this quiet, industrious, moral, and exemplary metropolis of the Saints."

FENCE securely, till deeply, enrich liberally, seed judiciously, weed cleanly, and irrigate as well as you can, and you may reasonably expect the smiles of Heaven upon your labors. But every other mode of using the share of earth placed under our stewardship, or greedily over-grasped by our selfishness, will end in more or less vexation and loss, as all very well know.—*Deseret News.*

A LESSON FROM THE BIRDS.—A gentleman observed in a thicket of bushes near his dwelling, a collection of brown thrushes, who for several days attracted his attention by their loud cries and strange movements. At length curiosity was so much excited that he determined to see if he could ascertain the cause of the excitement among them.

On examining the bushes he found a female thrush, whose wing was caught in a limb in such a way that she could not escape. Near by was her nest, containing several half-grown birds. On retiring a little distance, a company of thrushes appeared, with worms and other insects in their mouths, which they gave first to the mother, and then to her young; she in the mean while cheering them in their labor of love with a song of gratitude.

After watching the interesting scene until curiosity was satisfied, the gentleman released the poor bird, when she flew to her nest with a grateful song to her deliverer, and her charitable neighbors dispersed to their usual abodes, singing, as they went, a song of praise.—*National Intelligencer.*

AGRICULTURAL DISCOVERY.—A Paris letter writer states that a scientific gentleman discovered two years ago, embedded with some embalmed bodies, a species of wheat not then in existence. In the time of the early Gallic kings, a certain quantity of wheat was placed in the coffins of embalmed bodies. Some of it was sown, and it yielded from sixteen to twenty stalks to a grain, while there was on an average twenty more grains in the head than in the ordinary wheat.

UNITED STATES AGRICULTURAL SOCIETY.—The Fifth Annual Meeting of the United States Agricultural Society, will be held at the rooms of the Smithsonian Institution, in the city of Washington, D. C., January 14th, 1857, at ten o'clock, A. M.

Business of importance will come before the meeting. The Report of the Exhibition at Philadelphia, and the Journal of the Society for 1856, will be distributed to the members present. At the same time, awards of premiums on field crops will be made,

the officers of the Society for the ensuing year elected, and the propositions which have been received in relation to the Fifth Annual Exhibition acted upon.

A lecture will be delivered on the application of Science to Agriculture, by Professor Henry, of the Smithsonian Institution. Another lecture, on the Grasses of the United States, will be given by Charles L. Flint, Esq., Secretary of the Massachusetts State Board of Agriculture.

Other lectures and interesting discussions are expected on subjects pertaining to the objects of the Association.

The various Agricultural Societies of the United States are requested to send delegates to the meeting, and all gentlemen who are interested in the welfare of American agriculture, who would promote a more cordial spirit of intercourse between the farmers in different portions of our land, are invited to be present.

WM. S. KING, Secretary. MARSHALL P. WILDER, President.

December 11, 1856.

OVER TWO MILLION ACRES FARM LANDS.—We should have called attention to the Illinois Central Railroad's land in former numbers. Much of that land, we have occasion to know, is of an excellent quality, is well situated, and affords eligible locations for Eastern settlers. Of the prices, as compared with other lands in the market, we know nothing; but Mr. Wilson, the commissioner of these lands, we know to be an upright, gentlemanly, accommodating man, who will give purchasers every possible opportunity for seeing those lands, and suiting themselves, if possible; and we would advise families going West to take a look at these in his hands, before buying otherwhere. Special accommodations, we believe, are tendered to those contemplating a purchase, for seeing the lands, by the Illinois Central Road, on which many of them lie.

Book Notices, Etc.

RED BEARD'S STORIES FOR CHILDREN. Translated from the German by COUSIN FANNIE. Boston: Phillips, Sampson & Co. 67 pages.

This beautiful book for children, every page of which is capitally illustrated, is one of the famous stories wrought out by the fancies of our German friends, who alone can write them. It is one of the very best executed and most amusing of all the juvenile annuals we have ever seen. In its style of execution it is quite unique.

SOUTHERN PLANTER.—The December number of this Journal comes to us full of the most valuable matter for farmers, and full of promise. The proprietors say: "We propose to issue the January number of double size, *and beg that all who disapprove it, will give us immediate notice, on receipt of this number.*" We think nobody will object, for it is an excellent journal. It abounds in rich matter, and is printed so that it can be read. What is the use of printing like the New-York dailies, so that a man would be a fool to spoil his eyes in trying to decipher the meaning?

THE LAST OF THE HUGGERMUGGERS; a giant story, with illustrations. By CHRISTOPHER PEARSE CRANCH. Boston: Phillips & Sampson. 70 pages.

KOBBOLTOZO; a sequel to "The Last of the Huggermuggers;" with illustrations. By CHRISTOPHER PEARSE CRANCH. Boston: Phillips, Sampson & Co. 1857. 95 pages.

If these two books are to be judged by their externals, they should have a high rank in any gentleman's library. They are printed upon the very best paper, in most

elegant type, and bound in elegant covers. Looking at the text, we are very much amused, and live over our boyish days, when tales of this sort from the German, Mother Goose, &c., formed almost our whole libraries for children. Parents, then, we suppose, like ourselves now, were as much amused by them as their children, and though moral tales and juvenile biographies have since then been *invented*, we are by no means disposed to abandon the former fashion. We think these, though by no means answering the same ends, yet as important to a child's proper development, as Scripture lessons, or catechisms. Let every parent buy all these three books for his children.

THE MINNESOTA HANDBOOK for 1856-7, with a new and accurate map. By NATHAN H. PARKER, author of "Iowa as it is," &c. Boston: John P. Jewett & Co. 12mo. 159 pages.

THE IOWA HANDBOOK for 1856, with a new and correct map. By NATHAN H. PARKER, author of, "Iowa as it is," &c. Boston: John P. Jewett & Co. 12mo. 187 pages.

In giving to the public these two books, Mr. Parker has done his fellow-countrymen a very useful service, and he has done it well. The books are all they ought to be. Mr. Jewett, as usual, has done his part in most excellent style, and presented two small volumes as honorable to the liberality of the publisher as to the skill of the artisans who performed the service.

THE BIBLE IN THE WORKSHOP; OR, CHRISTIANITY THE FRIEND OF LABOR. By Rev. JOHN W. MEARS. New-York: C. Scribner. 1857. 12mo. 344 pages.

We have run over the pages of this volume with great pleasure. Its style is good; its aims are high and noble, and are well pursued; and the entire discussion is able and manly. We have now to notice only a single point, to wit: How is the necessity of labor a curse? Adam was obliged to work in Eden. How did the fall affect this necessity? "All fields of human activity are cursed," says our author, "not so much by the direct interposition of the Deity, altering their nature, as by being in the hands and under the management of sinful men." These have multiplied the necessities for labor, and "involved it in circumstances which cause the laborer to toil excessively and unreasonably." This is sound; and the indolence, the vices, the diseases which flow from sin, all conspire to make labor offensive, and to be avoided by all possible contrivances and frauds upon ourselves and others.

PAUL FANE; OR, PARTS OF A LIFE, ELSE UNTOLD. A novel. By N. PARKER WILLIS. New-York: C. Scribner. 1857. 12mo. 402 pages.

The hero of this volume, Paul Fane, is a graduate of one of our colleges, who goes to Florence that he may learn to be an artist. There he finds Mr. Wabash Blivens, his former chum, a native of Indiana, who also had a desire for the same profession, and who had left college, and become a painter, having already served as artist for a theatrical company, performing on a flat-boat in the Mississippi. The story of their experiences, the acquaintances they made, and various incidents, scenes, loves, &c., happening in connection with them, professionally and otherwise, their associates and occasional acquaintances, make up the story. The style is very Willis-y, sprightly, of course; many happy hits are made. The narrative is sometimes instructive, and the story highly amusing; but now and then presents scenes and descriptions of doubtful propriety. It will be read extensively, and many will highly and unqualifiedly commend it.

LIFE IN ISRAEL; OR, PORTRAITURES OF HEBREW CHARACTER. By MARIA T. RICHARDS, author of "Life in Judea." New-York: Sheldon, Blakeman & Co. 1857. 389 pages 12mo.

This is an elegantly written and well digested historical account of the Jews, arranged in chapters, under three several titles or parts. 1. The pilgrimage from Egypt.

2. The reign of Solomon. 3. The captivity. We need not say that it is not only a period of absorbing interest in itself, but one having a most intimate connection with the claims of the Christian religion. This volume will be read with great interest, and is a very valuable addition to the literature relating to that period.

CHAPLAINS OF THE GENERAL GOVERNMENT, with objections to their employment considered, &c., by LORENZO D. JOHNSON, author of, "Churches and Pastors of Washington." New-York: Sheldon, Blakeman & Co. 1856. 82 pages 12mo.

The title exhibits the object of this little volume. It contains also a list of all the chaplains in Congress through the entire existence of our government. It is a very convenient manual.

AN ETYMOLOGICAL DICTIONARY OF FAMILY AND CHRISTIAN NAMES, with an essay on their derivation and import. By WM. ARTHUR, M. A. New-York: Sheldon, Blakeman & Co. 1857. 300 pages 12mo.

The lover of genealogical discussions, and of theories connected with ancient names, will find in this volume something which they cannot afford to be without. It is well digested, alphabetically arranged, and handsomely executed. Much labor has been devoted to it.

THE RURAL POETRY OF THE ENGLISH LANGUAGE, illustrating the seasons and months of the year, their changes, employments, lessons, and pleasures, topically paragraphed, with a complete index. By JOS. WM. JENKS, M.A., lately professor of language in the Urbana University of Ohio. Boston: J. P. Jewett & Co.; Cleveland, O.: Jewett, Proctor & Worthington; New-York: Sheldon, Lamport & Blakeman. 1856. 8vo. 544 pages.

We do not know of any publisher whose books are executed in a superior style to those of this enterprising firm. They are thorough masters of their business, and efficient in execution. Hence they sell large editions of their books, and authors have found out this fact, and the firm are overrun with manuscripts, a multitude of which they are obliged to decline.

The book, the title of which is given in full as our caption, is a beautiful sample of typography, on beautiful paper, and inclosed in the very best style of cloth covers. It is throughout in most excellent taste.

Examining the contents of these pages, we are equally gratified. The editor has done his work faithfully. The index contains the names of the very best poets of the English language. Among these are Thomson, (his Seasons,) Hesiod, (his Works and Days, translated from the Greek by C. A. Elton,) Gay, Tusser, Bryant, Merrick, Bloomfield, Virgil, (his Tityrus and Meloboeus, from the Bucolics, by Dryden,) Milton, Herbert, Mrs. Barbauld, Mrs. Hemans, Percival, Longfellow, Dyer, Cooper, Somerville, Shenstone, Cunningham, Anacreon, (translation,) Rogers, Armstrong, Cowper, and a long list of other distinguished writers. No selection of Rural Poetry, that we have seen, compares with this in point of excellence, and not one excels it in elegance of execution. It contains twenty-six handsome and appropriate illustrations.

VIOLET; OR, THE CROSS AND THE CROWN. By M. J. MCINTOSH, author of "To Seem and to Be," "Charms and Countercharms," &c. Boston: John P. Jewett & Co. 448 pages.

It has been our fortune to have occasion to notice some of the juvenile books of Miss McIntosh, in months past, and to commend them, unqualifiedly, in their words, thoughts, and action, in design, plan, and execution. We have now upon our table, a new volume, intended for maturer minds. Those who knew Miss McIntosh expected nothing less than smooth, and pure, and even elegant Anglo-Saxon, and a high moral tone. With such anticipations we opened this volume, and were not disappointed. In clear transparency of style, with imagery well chosen, and never introduced for mere display, she conveys her thought to the reader's mind precisely as it was presented to her own.

The plan of the story is well conceived, and capitally carried out. You anticipate the ultimate disposition of some of the principal characters; but in its details you can anticipate nothing, and, while nothing is crowded, you are carried along into one scene after another, each exciting a deep interest in its turn. On the other hand, there are no long chapters of tedious commonplace, interrupting the story, and designed to swell the book, and exhausting the reader's patience. In this respect, the book is a perfect model. Looking at the separate characters, it is clear that Miss McIntosh has achieved a triumph. Violet is an exquisite piece of art, not inferior in moral or material beauty to any heroine of any author. Van Dyke, the ignorant, brutal wrecker, stands out upon the canvas, not a demon, but a living, bad man. Katy, degraded and depraved, is a woman still, and so far as her own dark mind and heart can give light to her path, faithful to all her friends. So of all the rest. They are real, living men and women, and neither is a copy of any body. The general effect of the book cannot fail to be excellent. It is a life-boat, launched upon a rough sea, and may save many. The cross may secure a crown. It has done us good, and we thank the learned authoress for ourself, and we are sure she has done a good service for the public.

It is for sale by Sheldon, Blakeman & Co., New-York, and H. P. Jewett, Cleveland, Ohio.

Moore's Rural New-Yorker.—This is an excellent agricultural and family newspaper, published weekly at Rochester, N. Y., at $2 a year. Mr. Moore has shown great tact and energy in raising it to its present extensive circulation, approaching fifty thousand, in Western New-York and throughout the Union. That he is bound to prosper we have not a doubt, nor have we a particle of envy, for we are going onward too; and what is more, we have long known him as one of those men, whose principle of action is "to live and let live;" or, in other words, we commend him to our readers as a publisher, who wishes to make a living by his paper, and yet so that every subscriber shall have a "good bargain." Mr. Moore has authorized us to offer the Rural New-Yorker in connection with our journal, on terms which are satisfactory to us, and which cannot fail to gratify such of our readers as may desire a weekly agricultural and miscellaneous paper, sprightly in its character, and abounding in news of transient interest, in connection with a more solid, and, as we think, more reliable and permanently valuable monthly. We offer his as a more frequent visitor, better adapted to keep the subscriber "read up" in the world's "whereabouts," ours as one that we believe will be longer entertained, and both at the price of our own to single subscribers. See Business Notice on another page.

Daisy; or, The Fairy Spectacles. By the author of "Violet: A Fairy Story." Boston: Phillips, Sampson & Co. 1857. Pp. 175. 18mo.

The extensive commendation bestowed upon the beautiful moral tale of "The Violet," by the same author, has drawn forth this volume. It is characterized by the same simplicity of style, the same sympathy with nature, the same love of the good and the true, as its predecessor. We commend it for its purity of style, correctness of principle, its generous spirit, and its refined taste, as a book eminently suitable for children.

The Play-Day Book. New stories for little children. By Fanny Fern. Illustrated by Fred. M. Coffin. Published by Mason Brothers, 108 and 110 Duane street, New-York.

This is a beautifully executed little book, written in the peculiarly attractive style of the authoress, well adapted to please "little children," and we think also to please and instruct children of a larger growth. A pretty gift for the holidays.

MORGAN HORSES. BY D. C. LINSLEY. C. M. Saxton & Co., 140 Fulton street, New-York.

Having noticed this work, while in progress of publication, we introduce it again, only to say that since seeing it in a more perfect form than we then could, and after more time for its perusal, we find it all that we then expected—the very work wanted by all who breed horses, and by all who use them. We learn that although the work is but just from the press, the fourth thousand is now on sale.

WORTH, NOT WEALTH; AND OTHER TALES. By COUSIN ANGIE. Boston: Phillips, Sampson & Co. 1857. 174 pages.

It would be an improvement if our language had a distinction of sex for the word cousin, like the French *un cousin* and *une cousine*. We suppose, however, by the name, Angie, that the writer of this book is of the gentler sex, *une cousine*, not *un cousin*. Be that as it may, the book is a good one, and has an important moral, one which ought to be impressed strongly at this time, when *worth* seems to be (we do not believe it is) succumbing to the too powerful *dollar*. Wealth is certainly a good thing; we wish every body had enough of it; but it is not every thing. A person may be *rich* without it; and may be intolerably *poor* with it. Every one has seen striking examples of both. Rich *poor people* and poor *rich people* may be seen without going half so far as would be necessary to see a baboon or a mermaid. Rascality and wealth are too often preferred to competency and worth; but there is a better time coming; and such books as this in the hands of our children will hasten it.

BRIGHT PICTURES FROM CHILD LIFE. Translated from the German. By COUSIN FANNIE. Boston: Phillips, Sampson & Co. Pp. 176. 12mo.

This, like the other books we have noticed by the same firm, is beautifully executed and is embellished with four colored engravings, giving it, in addition to a rich variety of interesting and useful matter, an extra value for children and for all who have taste enough to appreciate the beautiful, or benevolence enough to rejoice in seeing children pleased at the same time that they are instructed.

THE SPRINGFIELD (Mass.) WEEKLY REPUBLICAN, as will be seen by a reference to our advertising pages, is offered at the very low price of $1 a year to clubs of twenty and upwards. It is a large sheet, beautifully printed, and is edited with consummate ability by Messrs. Bowles, Holland, and their associates. We have known these gentlemen for years, have been a constant reader of their papers, and we can assure our readers, that, in their advertisement in this number they do not overstate their resolution and ability, nor their actual success, in making a journal of which the best judges most approve. Of their political views, we say nothing, except that they are open, manly, and earnest in their support of them—just what we like to see in all parties. With the single exception of their own *Daily Republican*, their weekly is the best literary and general newspaper known to us east of this city.

A NEW CHESS MONTHLY has been commenced in this city under the editorship of those admirably qualified for the service, and published by Messrs. P. Miller & Son, Thames street. The first number is issued. It exhibits familiarity with the subject and a talent for good writing. It is also very handsomely executed. Interesting games will be given in every number. Price $3 a year. Give them a lift.

BUSINESS NOTICES.

MOORE'S RURAL NEW-YORKER.—As will be seen under our BOOK NOTICES, we are prepared to furnish MOORE'S RURAL NEW-YORKER with our journal, to such as may

desire a lively, enterprising weekly agricultural and general newspaper in connection with a monthly of substantial and more permanent value.

New subscribers, who will advance us three dollars, shall receive the two, promptly mailed from their respective offices, in New-York and Rochester.

Old subscribers, at $3 a year, who have paid in advance, and all who will do so, shall receive the *Rural New-Yorker* with our journal without extra charge, upon signifying their wish to that effect.

Those now taking our journal, or who may hereafter take it in clubs, at reduced rates, shall be entitled to receive *Moore's Rural New-Yorker* with it, on forwarding us the difference between their club price and three dollars.—Eds. P., L., & A.

The Cash Plan.—We have long been desirous of carrying fully into effect the plan of advanced payments, but have been deterred on the ground of a seeming indelicacy, as if we would urge our subscribers, already good payers, as the general rule, to be better. But let us look at this:—A few of them, very few compared with the whole, but enough to effect sensibly our year's receipts, are bad payers, and some are no payers at all, after having had the work for years. We send out collectors, but they are not to be found, or they have lost their property, or have made a still greater loss—that of the disposition, if they ever had it, to be just.

Now the philosophy of paying for periodicals, on any other than the cash in advance system, is just here, all in a nut-shell: The payers pay both for themselves and the non-payers—that is, they pay more than they otherwise would, because some do not pay any thing. They are a sort of unfortunate insurers, who take the risk, but get no premium, and we should think the business would not pay them. On the cash principle, every subscriber pays for himself, and no more. The publisher puts the price lower because there are no non-payers in the case, since, if all pay in advance, the work is sent to none till they have actually paid. Thus the publisher gets his pay equitably from all, and the paying subscriber gets his periodical at a lower rate.

The cash system, then, is the most economical, the most just, the best for both subscriber and publisher. We cannot make up our minds to enforce it, against the judgment of as good a set of paying subscribers as there is in the country—better as a whole, we positively believe, than those of any other publication—but cannot our subscribers see, that this is the best way for us and them, and will they not coöperate with us in bringing it about? By paying up arrears, and then falling into clubs, or taking the *Rural New-Yorker* in connection with our journal, if they like our offer, and sending us a less sum in advance than our price to single subscribers, they will make a saving to themselves, will escape paying money for delinquents, for if all will do this there will be no delinquents, and will do us a kind thing, which we will be pledged not soon to forget. Say yes, reader, to our proposition—do it "right off," and you will make our hearts glad, at this joyful season, when we believe all hearts rejoice but those of publishers who cannot get their pay.—Eds. P., L., & A.

List of Patents

ISSUED FROM THE U. S. PATENT OFFICE FROM OCT. 28 (THE TERMINATION OF THE PREVIOUS LIST) TO NOVEMBER 26.

Christopher Amazeen, Newcastle, N. H., operating the pawl cases of a ship's windlass.

Robert Anderson, U. S. A., and Aaron H. Vancleve, Trenton, N. J., cutting metals.

William A. Burt, Mount Vernon, Mich., equatorial sextant.

Albert Carter, Forestville, Ct., odometers.

Edwin A. Davis, Crawfordville, Ind., railroad station indicators.

Martin Eberhard, Philadelphia, Pa., rocking chairs.

Joseph R. Perry, Port Clinton, Pa., joint for uniting a morticing chisel to its mandrel.

William G. Creamer, New-York City, railroad car brake.

Ormrod C. Evans, Staunton, Iowa, spading machines.

Harlan P. Gerrish, Boscawen, N. H., husking corn.

Hiram Groves, New-York City, automatic musical instruments.

Peter C. Guion, Cincinnati, Ohio, cowl or draft accelerator for steamers.

Dennis Harrigan, Winchester, Mass., railroad car brake.

John Harris, Hoosick Falls, N. Y., making rope.

Nathaniel Hayward, Colchester, Ct., catch for India-rubber shoes.

Elmore Horton, Bristol, Ct., fishing implement.

Lucius J. Knowles, Warren, Mass., looms.

Pells Manny, Waddam's Grove, Ill., automatic rakes for reapers.

Wm. McLachlan, assignor to Robert Livingston, New-York City, burglar's alarm.

James F. Monroe, Fitchburgh, Mass., lubricator.

Henry B. Osgood, Dorchester, Mass., spring frame for packages.

Thomas R. Reach, West Needham, Mass., hay rakes.

L. D. Phillips, Chicago, Ill., trowels.

Wilson A. Purdom, Jackson, Miss., cotton gins.

Joshua Perkins, West Killingsley, Ct., husking corn.

John Robingson, New-Brighton, Pa., chain umps.

S. H. Roper, Roxbury, Mass., sewing machines.

David M. Tyler, Lisle, N. Y., starting and stopping water-wheels.

Joel Smith, Northbridge, Mass., throstle spinning machines.

John C. Smith, New-Hartford, Ct., weaving long warps.

Richard Trussell, Brooklyn, N. Y., stirrups for riding-saddles.

George J. Wardwell, Hatley, Canada, sawing marble and stone.

Isaac M. Singer, New-York City, sewing machines.

Wm. F. Shaw, Boston, Mass., heating or cooking by gas.

A S. Walbridge, Burlington, Vt., self-acting head and tail blocks for sawing-mill.

Thomas Maycock, assignor to himself and Henry Rice, Buffalo, N. Y., crain tile machine.

William S. Pratt, assignor to J. S. C. Thursby, Brooklyn, N. Y., fabric for underlaying carpets.

Alexander Smith and Halcyon Skinner, West Farms, N. Y., power looms.

David M. Lawrence, Cincinnati, Ohio, shutter fastener.

Wm. H. Plumb, New-York City, crushing rollers for ores.

Benj. Mackerley, New-Petersburg, Ohio, cider-mills.

Alfred Tippett, Washington, D. C., tool for tenoning, etc.

Francis Armstrong, New-Orleans, improvement in bumper brakes for railroad cars.

Fred'k H. Bartholomew, New-York, improved anti-frost faucet.

Geo. Bradley, Paterson, N. J., improved steam drag.

Thos. Carr, Liverpool, England, improvement in steering apparatus for ships.

John Cole, A. Little, and O. Wall, DeWitt, Ill., improvement in draining machines.

Almon Cooley, Hartford, Ct., assignor to Roderick Terry and A. Cooley aforesaid, same place, improvement in fastening door-knob spindles.

Legrand Crofoot, Syracuse, improved door fasteners.

J. Henry Darlington and Wm. Piper, New-York, improved diaphragm fluid meter.

John P. Derby, Cavendish, Vt., sleeve fastener.

Gustavus Fincken, Brooklyn, sugar draining apparatus.

Geo. F. Foote, Buffalo, improvement in machine for harvesting grain.

Wm. L. Gallaudet, New-York, improved spring holder for slate blinds.

John C. Harris, Savannah, improvement in water gauges for steam boilers.

Samuel L. Harris, Massachusetts, and Henry B. Osgood, Dorchester, improved method of regulating the draught of house furnaces.

August Hengstenberg, Muscatine, Iowa, candle-mould machine.

Moses G. Hubbard, Penn Yan, improvement of cutting apparatus of grain and grass harvesters.

G. W. Hyatt, Auburn, improvement in forks for handling heated plates.

Rudolph Kneeht, New-York, improved method of ventilating ships, etc.

Henry Kruse, New-Orleans, improvement in wagons.

Robert Lawson, St. Louis, improved waste valves for hydrants.

George D. Lund, Yonkers, improved method of hanging reciprocating saws.

James W. Martin, Philadelphia, improved method of preparing ratan for umbrellas.

Charles Miller, New-York, improvement in cutting tiles.

Samuel Morrill, Andover, N. H., improvement in cloth dyers.

Edwin M. Murphy, Lexington, Ill., medical respirator.

Ephraim L. Pratt, Philadelphia, improvement in machines for slicing apples.

Ira Reynolds, Republic, O., improvement in washing machine.

T. Sault, Seymour, Ct., process for cleaning India-rubber.

Gustave Scharffe, New-York, improvement in breech-loading fire-arms.

John R. Sees, New-York, arrangement of means for heating feedwater of locomotive engines.

Christian Scharps, Philadelphia, improvement in breech-loading guns.

W. G. Sterling, Bridgeport, Conn., gas regulators.

Thomas B. Stout, Keyport, improvement in millstone dress.

Wm. H. St. John, New-York, coppering gas retort fastening.

Wm. Taggart, Haverhill, improved projectile for fire-arms.

Reuben Wright, Westfield, N. Y., improved weather-strips for doors.

Jacob Geiss and Jacob Brosins, Belleville, Ill., improvement in machine for cutting vegetables.

Alvin Bullock, Busti, N. Y., improvement in harvesters.

Ephraim L. Pratt, Philadelphia, assignor to Leonard Harrington, Worcester, Mass., improvement in machines for paring apples, potatoes, etc.

John F. Willey, Fredonia, assignor to Benj. F. Merrill and Thos. Phillips, Cassadaga, and Jno. F. Willey, aforesaid, improvement in excavators.

Henry Bessemer, London, England, improvement in the manufacture of iron and steel. Patented in England, Feb. 12, 1856.

Henry Bessemer, London, England, improvement in smelting iron ore. Patented in England, Aug. 25, 1856.

Geo. S. Burrows, Mystic River, improvement in attaching center boards to vessels.

Phineas Burgess, New-York, improvement in machinery for polishing glass.

Wm. D. Gallaher, Bensalem Township, Pa., improvement in machines for sawing marble.

Richard G. Holmes and W. H. Butler, New-York, improved burglar-proof safe.

Chase B. Horton, Elmira, improvement in machines for cleaning grain.

Wm. A. Ives, New-Haven, Ct., improved spring latch and lock.

Augustus Jouan, San Francisco, for lee-boards for vessels.

Augustus Jouan, San Francisco, improvement in propeller shafts.

Allen Lapham, Brooklyn, assignor to himself and Stephen Wilkes, same place, improvement in combined steam boilers and kettles.

Spencer Lewis, Tiffin, Ohio, improvement in bedstead fastenings.

La Fayette Louis, Boston, improvement in melodeons.

Barnetz McKeage, Accotinck, Va., for improved stave jointer.

C. A. McPhetridge, St. Louis, improvement in cotton gins.

C. A. McPhetridge, St. Louis, improved binder for grain harvesters. Ante-dated Oct. 25, 1856.

Bennett Potter, Jr., Charlestown, mode of softening cork by steam.

Pierre Etienne Proust, Orleans, France, improvement in lubricating car axle and other journals.

Julius A. Roth, Philadelphia, for bleaching process.

G. H. Stevens, Lowell, Wis., improved boring and morticing machine.

Charles M. Zimmerman, Philadelphia, for tailpiece for violins, etc.

Jos. Lyndall, Santa Clara, assignor to Cyrus Roberts, of Belleville, Ill., improvement in grain separators and conveyors.

Charles P. Carter, Ware, Mass., assignor to Leonard Harrington, Worcester, Mass., improvement in machines for paring apples.

Josiah B. Pomroy, Chicago, improved device for governing the parallel yielding of lumber feeding rollers.

C. W. Williams, Boston, improvement in tailors' pressing machines.

J. Albright, Greenville, Tenn., improvement in machines for stuffing horse collars.

Jas. Anderson, John McLaren, and John Bryant, New-York, improved lathe for cutting fluted moldings.

F. L. Bailey, Boston, improvement in printing presses.

Stephen K. Baldwin, Guilford, N. H., improvement on the fourneyron turbine wheel.

Chas. Bickell, Baltimore, Md., for process of treating feldspar for a manure.

Thomas G. Clinton, Washington, D. C., improved alcohol cooking apparatus.

David Cumming, Sorrel Horse, Pa., improvement in boxes and axles, journals, etc.

Wm. Crane, Brooklyn, improvement in machines for polishing leather and harness.

Evan L. Evans, Providence, for improvement in curry-combs.

Edwin O. Goodwin, Bristol, Ct., improvement in backgammon and checker boards.

George G. Henry, Mobile, improvement in manufacturing cotton yarns.

Wm. W. Hubbard, Boston, improvement in lathe for planing metal.

A. F. Johnson, Boston, improvement in stitches for sewing machines.

George Kenny, Milford, N. H., improvement in turning circles for carriages.

M. C. Chamberlin and W. Filkins, of Sheldon, N. Y., improved machine for turning boot-legs.

Alexander La Mat, New-Orleans, improvement in fire-arms.

Samuel W. Phelps, Cincinnati, improvement in traveling trunks.

Aurelius M. Purnell, Washington, D. C., improved apparatus for exhausting air from and hermetically sealing cans and vessels.

Jeremiah P. Smith, Hummelstown, Pa., improved disk for shelling corn.

George C. Todd, Lynn, improvement in "edge keys" for making and polishing the edges of boot and shoe soles.

Chas. F. Thieme, Philadelphia, improved gas cock and swinging joint.

Uel West and Abner Mills, New-York, improvement in the construction of tubular condensers and heaters.

Wm. Whiteley, Jr., Springfield, Ohio, improved raking attachment for harvesters.

Wm. Wright, Hartford, Ct., improvement in adjustible cut-offs for steam engines.

J. Claude White and Robert Hay, Tuckerville, Pa., improved apparatus for hoisting coal.

Jos. A. Moore and Asahel H. Patch, Louisville, Ky., for improved finger bar arrangement for harvesters.

Thomas A. Chandler, Rockford, Ill., assignor to Harlow Herrick, La Grande, Ohio, and Thos. A. Chandler, aforesaid, improvement in hand corn-planters.

Wm. C. Watson, New-York, assignor to himself, Geo. H. Woorster and Morris Knight, of same place, improvement in sewing machines.

AGENTS FOR THIS JOURNAL

Are as follows: and no other names are recognized, as such, at this office.

S. D. Allen, Moore and Atkins, Paul A. Davis, in the Northern and Middle States James Deering and Henry M. Lewis, in the Southern States.